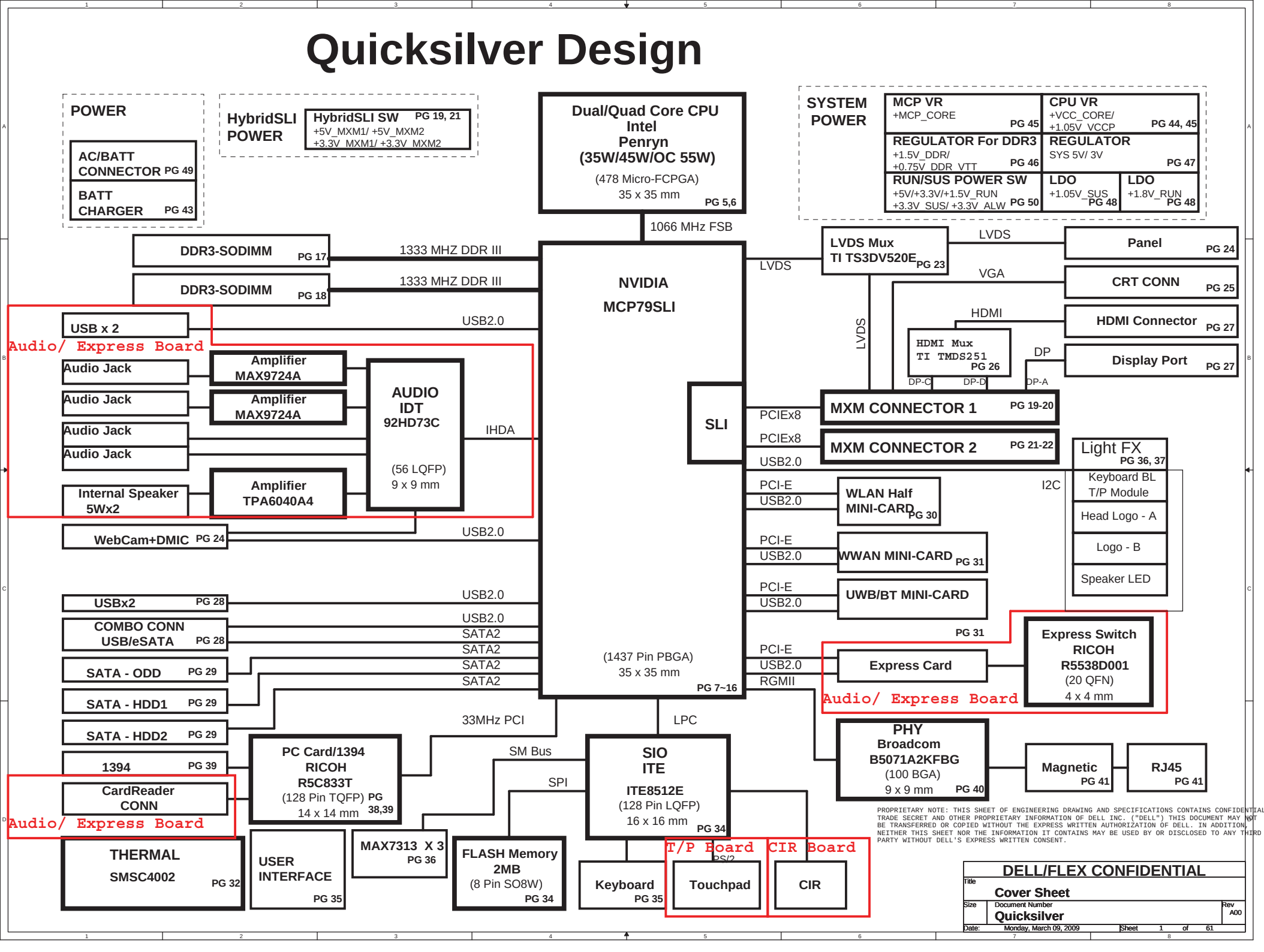
Quicksilver Design



DELL/FLEX CONFIDENTIAL

Title	Cover Sheet
Size	Document Number: Quicksilver
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INDEX

Power States

Power Rail	Control Signal	S0	S3	S4	S5	G3	S4/ M-off	S5/ M-off
+PWR_SRC	N/A	V	V	V	V	V		
+0.75V_DDR_VTT	RUN_ON	V						
+1.05V_VCCP	CPUVDD_EN	V						
+1.05V_RMGT	SLP_RMGT#	V						
+1.05V_SUS	SUS_ON	V	V					
+1.5V_RUN	RUN_ON	V						
+1.5V_DDR	SUS_ON	V	V					
+1.8V_RUN	RUN_ON	V						
+15V_ALW	N/A	V	V	V	V	V		
+3.3V_ALW	+3.3V_EN2	V	V	V	V	V		
+3.3V_RMGT	SLP_RMGT#	V						
+3.3V_RUN	RUN_ON	V						
+3.3V_SUS	SUS_ON	V	V					
+5V_ALW	+5V_EN1	V	V	V	V	V		
+5V_ALW2	N/A	V	V	V	V	V		
+5V_SUS	SUS_ON	V	V					
+5V_HDD	HDDC_EN	V	TBD					
+5V_MOD	MODC_EN	V	TBD					
+5V_RUN	RUN_ON	V						
+GFX_PWR_SRC	N/A	V	V	V	V	V		
+LCDVCC	ENVDD	V						
+MCP_CORE	RUN_ON	V						
+RTC_CELL	RTC	V	V	V	V	V		
+VCC_CORE	1.05V_VCCP _PWRGD	V						
+USB_RIGHT_PWR	USB_SIDE_EN#	V	TBD					
+USB_LEFT_PWR	USB_BACK_EN#	V	TBD					

By Anthony

Title: FRONTPAGE

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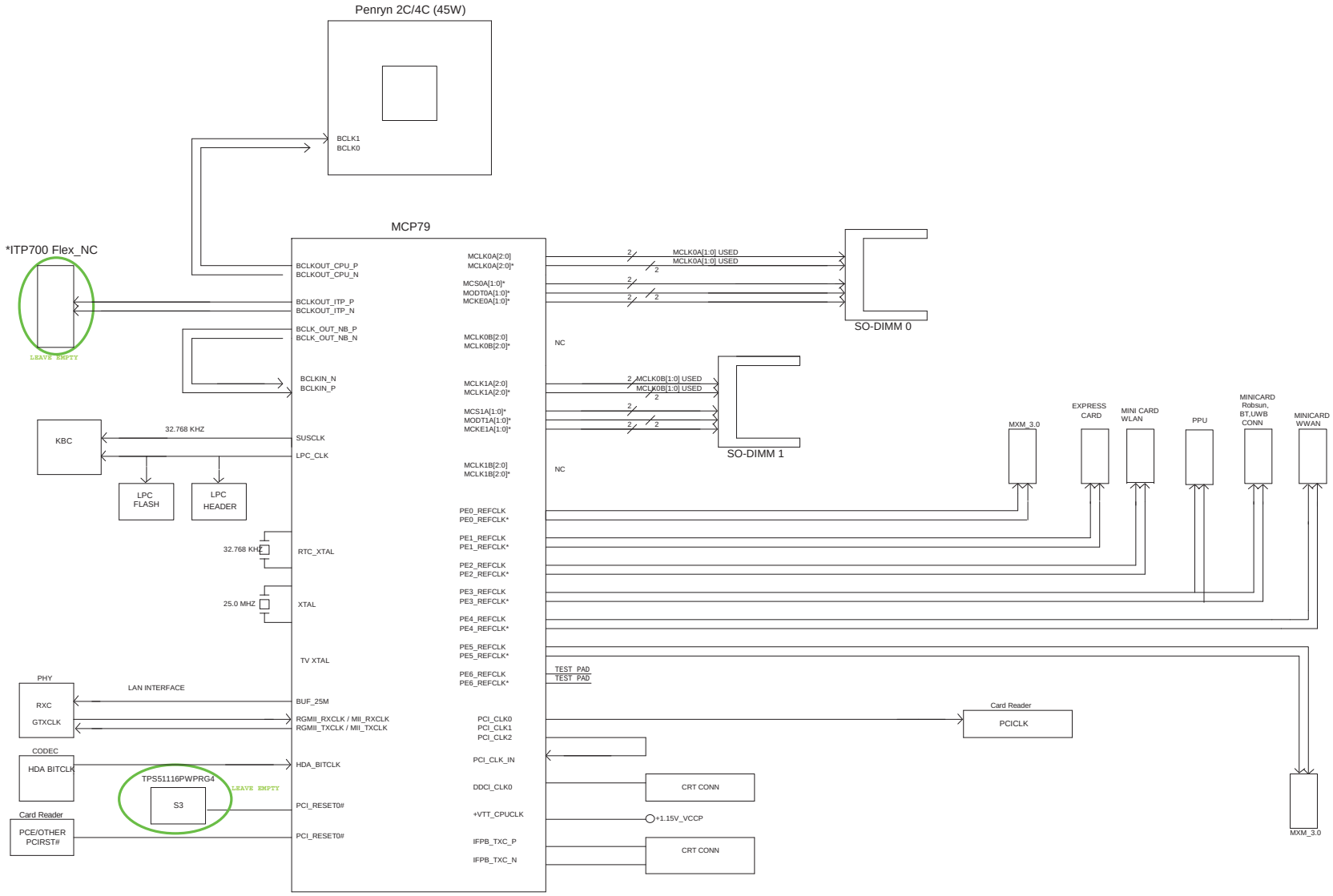

Title: **CLOCK MAP**

Size | Document Number: **Dell/FLEX Confidential** | Rev: A00

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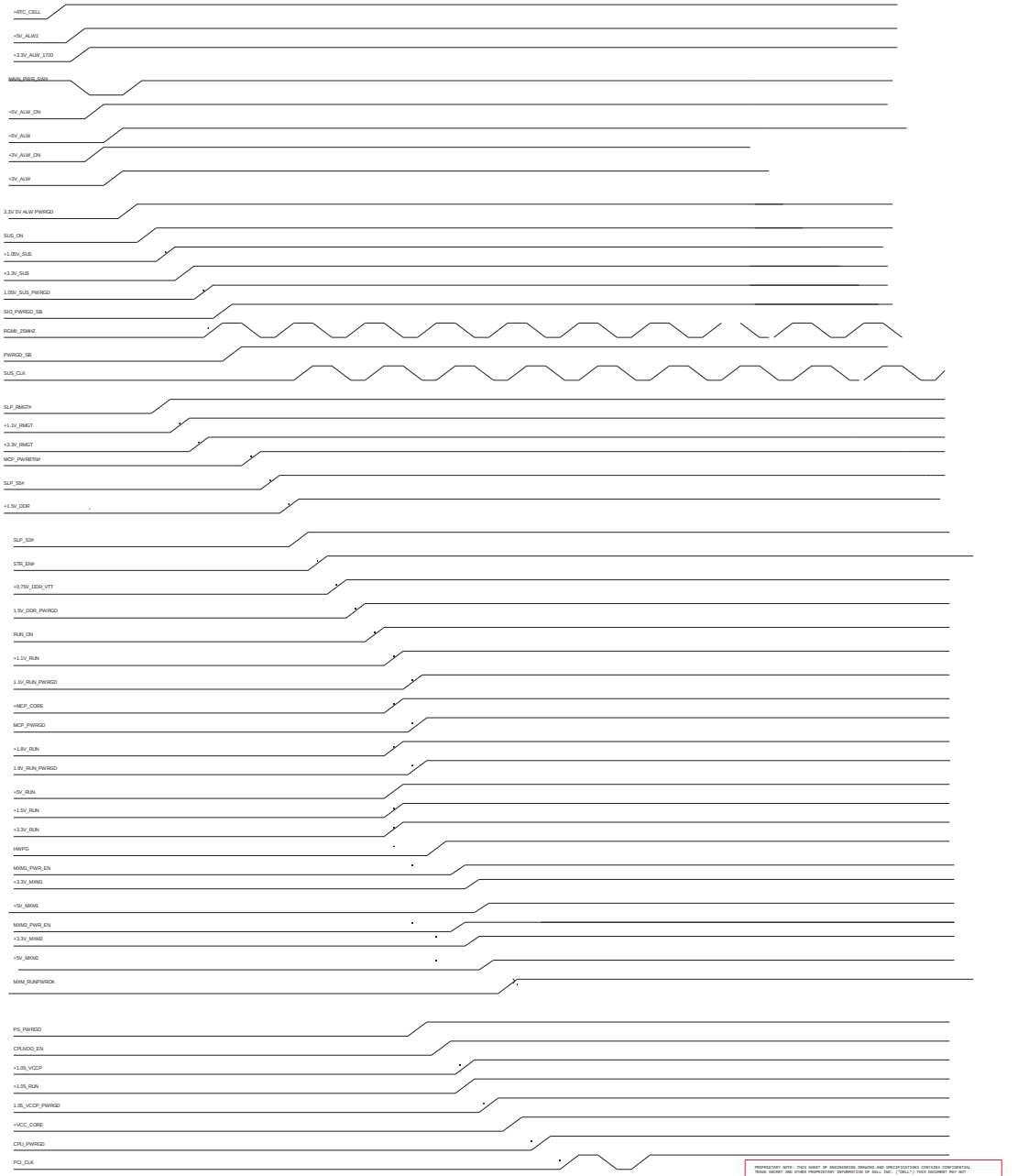
Quicksilver Power Up Sequence.

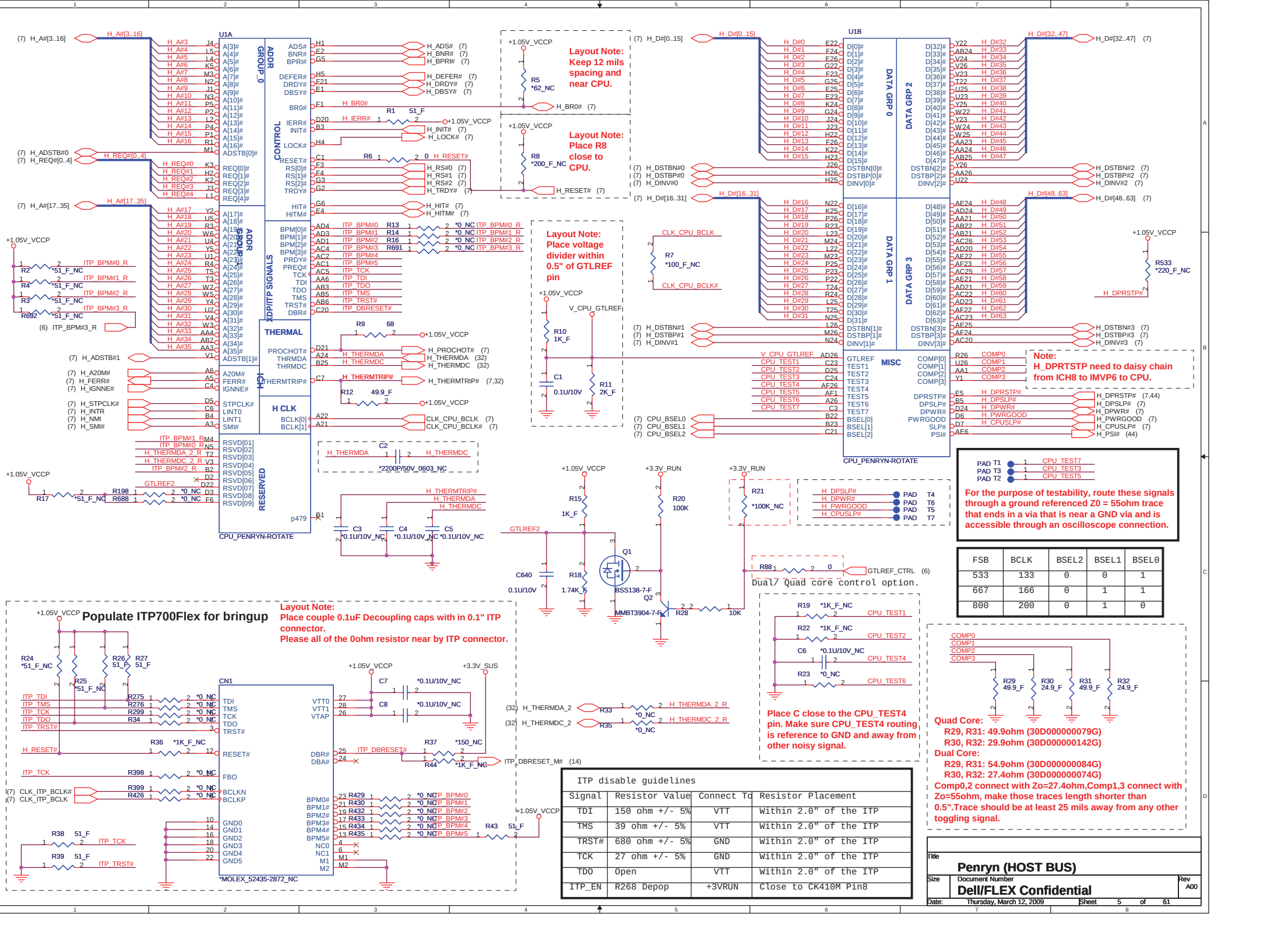


POWER SEQUENCING

DOCUMENT NUMBER

Dell/PLEX Confidential

SCALE: None | SHEET 1 OF 1



FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0

Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the ITP
TMS	39 ohm +/- 5%	VTT	Within 2.0" of the ITP
TRST#	680 ohm +/- 5%	GND	Within 2.0" of the ITP
TCK	27 ohm +/- 5%	GND	Within 2.0" of the ITP
TDO	Open	VTT	Within 2.0" of the ITP
ITP_EN	R268 Depop	+3VRUN	Close to CK410M Pin8

Title	Penryn (HOST BUS)
Size	Document Number: Dell/FLEX Confidential
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Date:	Thursday, March 12, 2009
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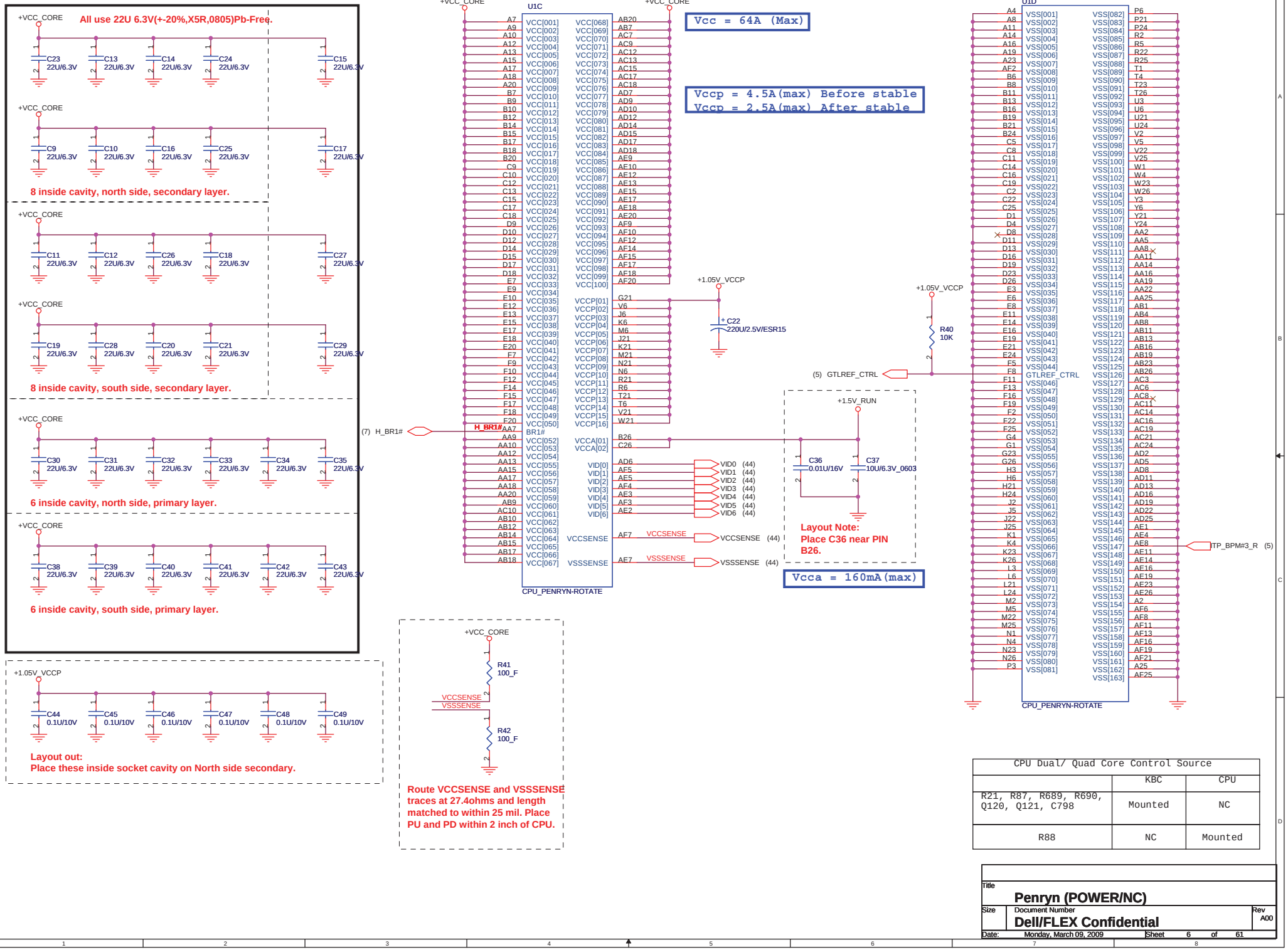

CPU Dual/ Quad Core Control Source		
	KBC	CPU
R21, R87, R689, R690, Q120, Q121, C798	Mounted	NC
R88	NC	Mounted

Title	Penryn (POWER/NC)	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
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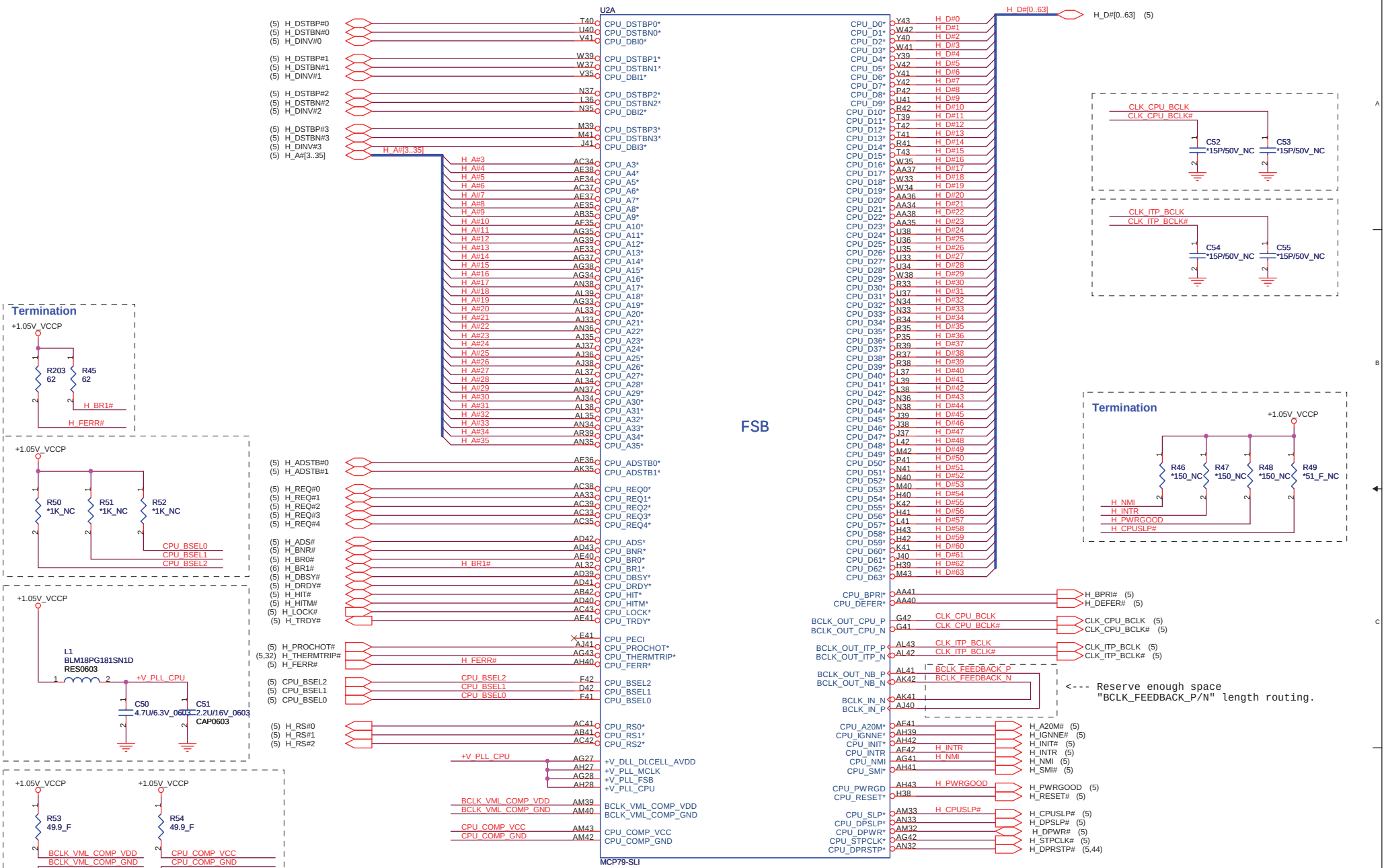
U2A
FSB
MCP79-SLI
(5) H_DSTBP#0
(5) H_DSTBN#0
(5) H_DINV#0
(5) H_DSTBP#1
(5) H_DSTBN#1
(5) H_DINV#1
(5) H_DSTBP#2
(5) H_DSTBN#2
(5) H_DINV#2
(5) H_DSTBP#3
(5) H_DSTBN#3
(5) H_DINV#3
(5) H_A#[3..35]
H_A#[3..35]
(5) H_ADSTB#0
(5) H_ADSTB#1
(5) H_REQ#0
(5) H_REQ#1
(5) H_REQ#2
(5) H_REQ#3
(5) H_REQ#4
(5) H_ADS#
(5) H_BNR#
(5) H_BR0#
(6) H_BR1#
(5) H_DBSY#
(5) H_DRDY#
(5) H_HIT#
(5) H_HITM#
(5) H_LOCK#
(5) H_TRDY#
(5) H_PROCHOT#
(5,32) H_THERMTRIP#
(5) H_FERR#
(5) CPU_BSEL2
(5) CPU_BSEL1
(5) CPU_BSEL0
(5) H_RS#0
(5) H_RS#1
(5) H_RS#2
+V_PLL_CPU
BCLK_VML_COMP_VDD
BCLK_VML_COMP_GND
CPU_COMP_VCC
CPU_COMP_GND
H_D#[0..63]
H_D#[0..63] (5)
CPU_BPRI*
CPU_DEFER*
BCLK_OUT_CPU_P
BCLK_OUT_CPU_N
BCLK_OUT_ITP_P
BCLK_OUT_ITP_N
BCLK_OUT_NB_P
BCLK_OUT_NB_N
BCLK_IN_N
BCLK_IN_P
CPU_A20M*
CPU_IGNNE*
CPU_INIT*
CPU_INTR
CPU_NMI
CPU_SMI*
CPU_PWRGD
CPU_RESET*
CPU_SLP*
CPU_DPSLP*
CPU_DPWR*
CPU_STPCLK*
CPU_DPRSTP*
H_BPRI# (5)
H_DEFER# (5)
CLK_CPU_BCLK (5)
CLK_CPU_BCLK# (5)
CLK_ITP_BCLK (5)
CLK_ITP_BCLK# (5)
BCLK_FEEDBACK_P
BCLK_FEEDBACK_N
<--- Reserve enough space
"BCLK_FEEDBACK_P/N" length routing.
H_A20M# (5)
H_IGNNE# (5)
H_INIT# (5)
H_INTR (5)
H_NMI (5)
H_SMI# (5)
H_PWRGOOD (5)
H_RESET# (5)
H_CPUSLP# (5)
H_DPSLP# (5)
H_DPWR# (5)
H_STPCLK# (5)
H_DPRSTP# (5,44)
CLK_CPU_BCLK
CLK_CPU_BCLK#
C52 *15P/50V_NC
C53 *15P/50V_NC
CLK_ITP_BCLK
CLK_ITP_BCLK#
C54 *15P/50V_NC
C55 *15P/50V_NC
Termination
+1.05V_VCCP
R46 *150_NC
R47 *150_NC
R48 *150_NC
R49 *51_F_NC
H_NMI
H_INTR
H_PWRGOOD
H_CPUSLP#
Termination
+1.05V_VCCP
R203 62
R45 62
H_BR1#
H_FERR#
+1.05V_VCCP
R50 *1K_NC
R51 *1K_NC
R52 *1K_NC
CPU_BSEL0
CPU_BSEL1
CPU_BSEL2
+1.05V_VCCP
L1
BLM18PG181SN1D
RES0603
+V_PLL_CPU
C50 4.7U/6.3V_0603
C51 2.2U/16V_0603
CAP0603
+1.05V_VCCP
+1.05V_VCCP
R53 49.9_F
R54 49.9_F
BCLK_VML_COMP_VDD
BCLK_VML_COMP_GND
CPU_COMP_VCC
CPU_COMP_GND
R55 49.9_F
R56 49.9_F
1. Route at normal impedance and 8 mils spacing to resistor.
2. 49.9 ohm to GND or VTT_CPU less than 1 inch from MCP79.
+V_DLL_DLCELL_AVDD
150mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
+V_PLL_MCLK
20mA with RUN rail
1 x ferrite bead
1 x 1uF X5R ceramic
1 x 0.1uF X7R ceramic
+V_PLL_FSB
29mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
+V_PLL_CPU
15mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
Title
MCP79_A (HOST)
Size
Document Number
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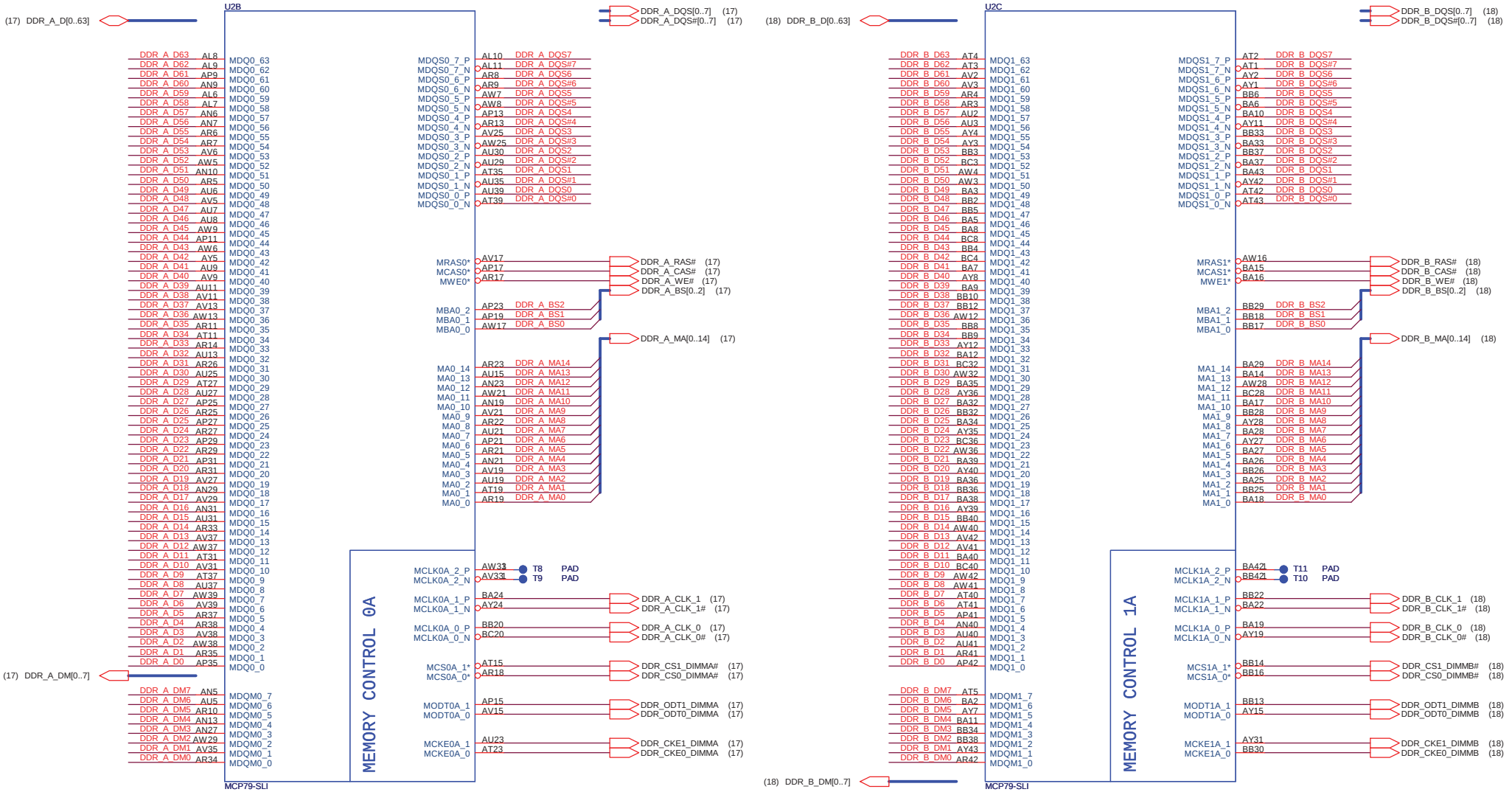

Layout Notice:

Memory Data Signal Group

MCP79 BGA Breakout (<175ps): Route at 50 ohm impedance and 1.5x dielectric height spacing.

After Breakout: Route at 40 ohm impedance and 4x(Microstrip) or 3x(Stripline) dielectric spacing.

DIMM Fan-in (<90ps): Route at 40 ohm impedance and 1.5x dielectric height spacing.

Memory Data Strobes

Route strobes differentially at 66 ohm impedance (42 ohm SE) and 5x dielectric height spacing to other signals.

Memory Clock Signal Group

MCP79 BGA Breakout (<90ps): Route at 50 ohm SE / 100 ohm differential impedance.

After Breakout: Route at 40 ohm SE / 66 ohm differential impedance and 5x dielectric height spacing to other signals.

Memory Address/Command/Control Signal Group

MCP79 BGA Breakout (<90ps): Route at 50 ohm impedance and 1.5x dielectric height spacing.

After Breakout: Route at 40 ohm impedance and 2x dielectric height to other signals and 3x dielectric spacing to other non-associated signals.

DIMM Fan-in (<90ps): Route at 40 ohm impedance and 1.5x dielectric height spacing.

Title	MCP79_B (DDR3)	
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+V_VPLL
39mA with RUN rail

+V_PLL_XREF_XS
17mA with RUN rail

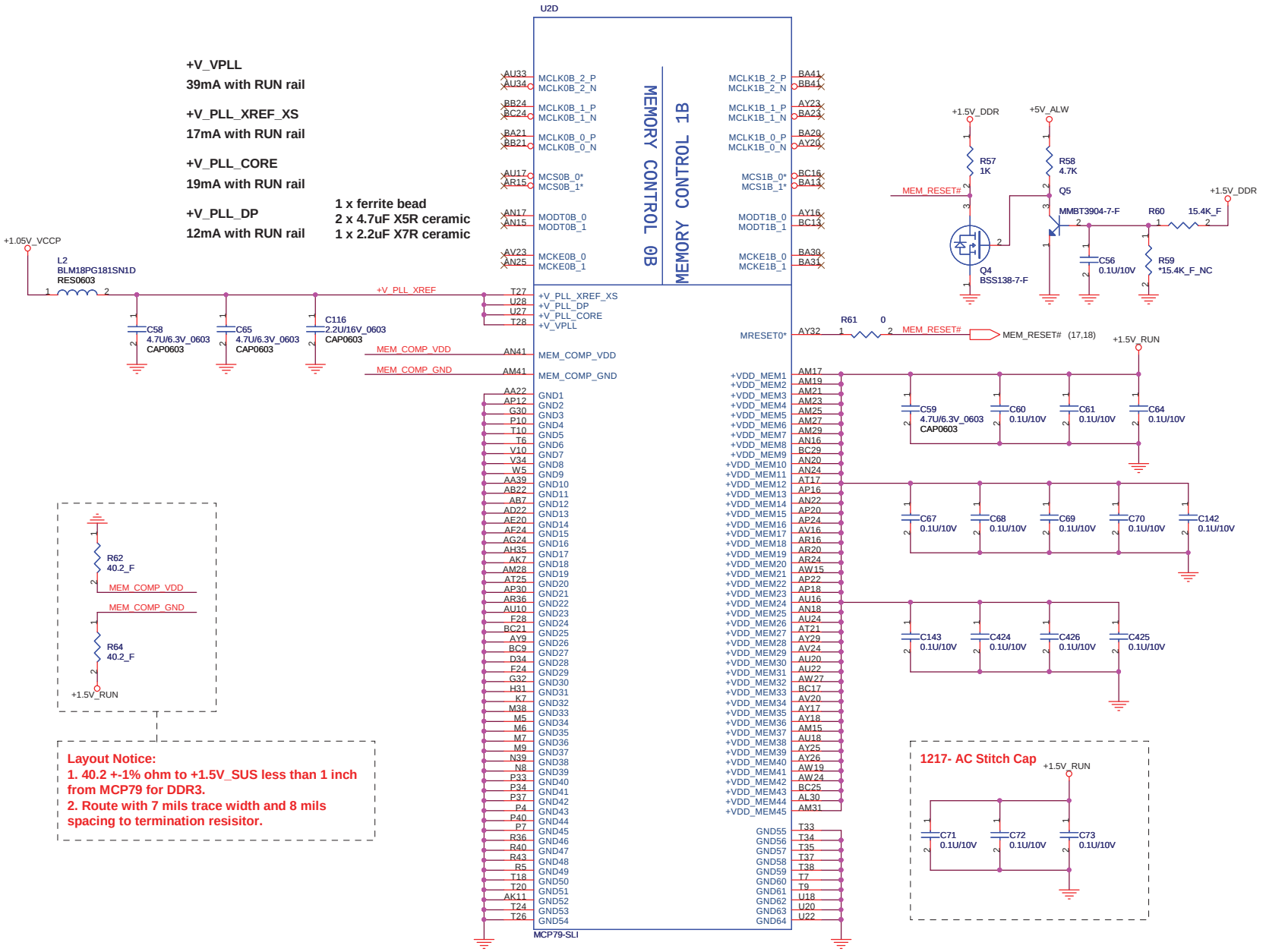
+V_PLL_CORE
19mA with RUN rail

+V_PLL_DP
12mA with RUN rail

1 x ferrite bead
2 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic

4.3A with ALW rail for S0
318mA for S0 Idle

1 x 10uF ceramic
9 x 0.1uF X7R ceramic



Title	MCP79_C (MEM POWER)	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
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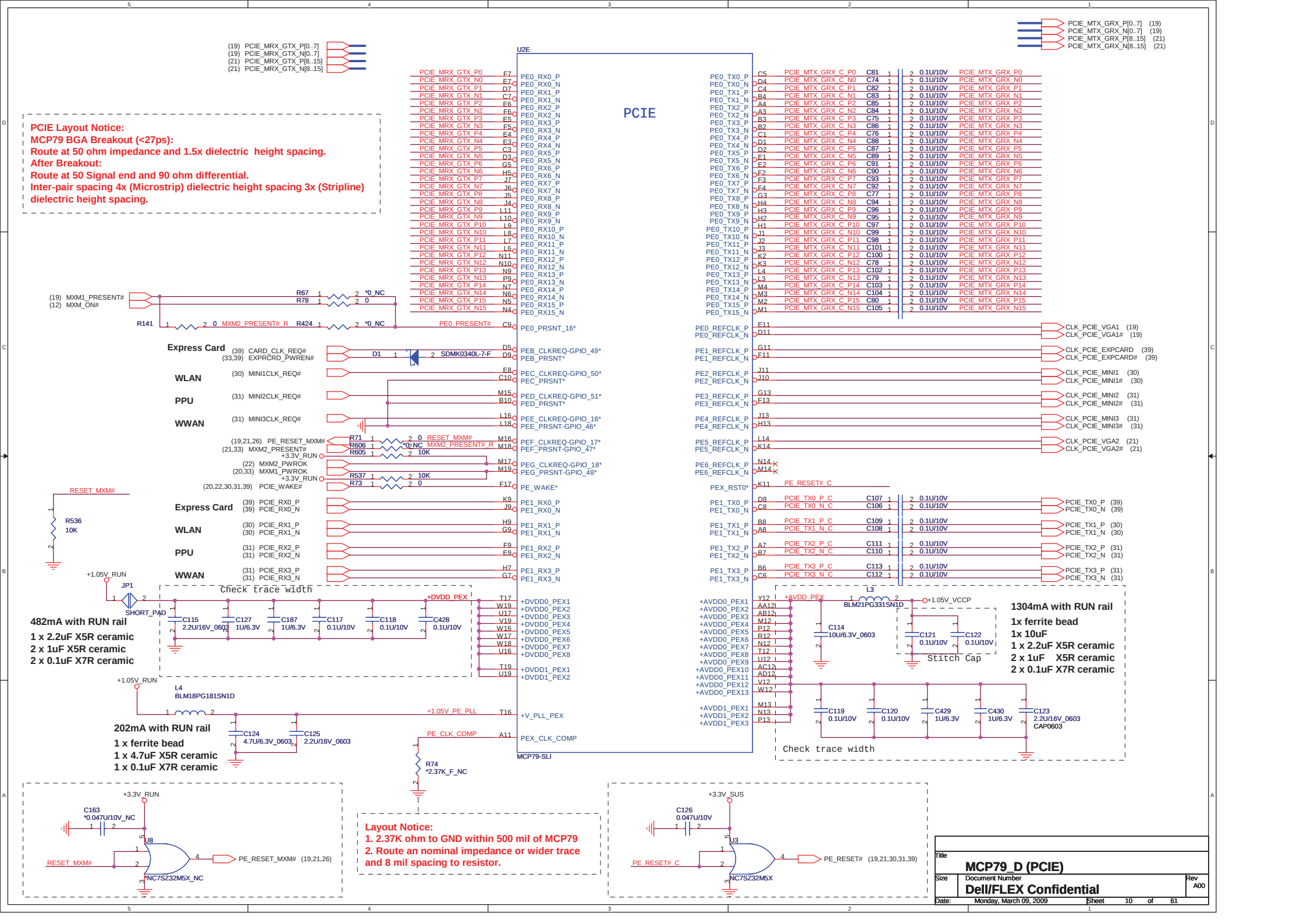
PCIE Layout Notice:
MCP79 BGA Breakout (<27ps):
Route at 50 ohm impedance and 1.5x dielectric height spacing.
After Breakout:
Route at 50 Signal end and 90 ohm differential.
Inter-pair spacing 4x (Microstrip) dielectric height spacing 3x (Stripline) dielectric height spacing.
PCIE
U2E
MCP79-SLI
Express Card
WLAN
PPU
WWAN
Check trace width
482mA with RUN rail
1 x 2.2uF X5R ceramic
2 x 1uF X5R ceramic
2 x 0.1uF X7R ceramic
202mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
1304mA with RUN rail
1x ferrite bead
1x 10uF
1 x 2.2uF X5R ceramic
2 x 1uF X5R ceramic
2 x 0.1uF X7R ceramic
Stitch Cap
Layout Notice:
1. 2.37K ohm to GND within 500 mil of MCP79
2. Route an nominal impedance or wider trace and 8 mil spacing to resistor.
Title
MCP79_D (PCIE)
Size
Document Number
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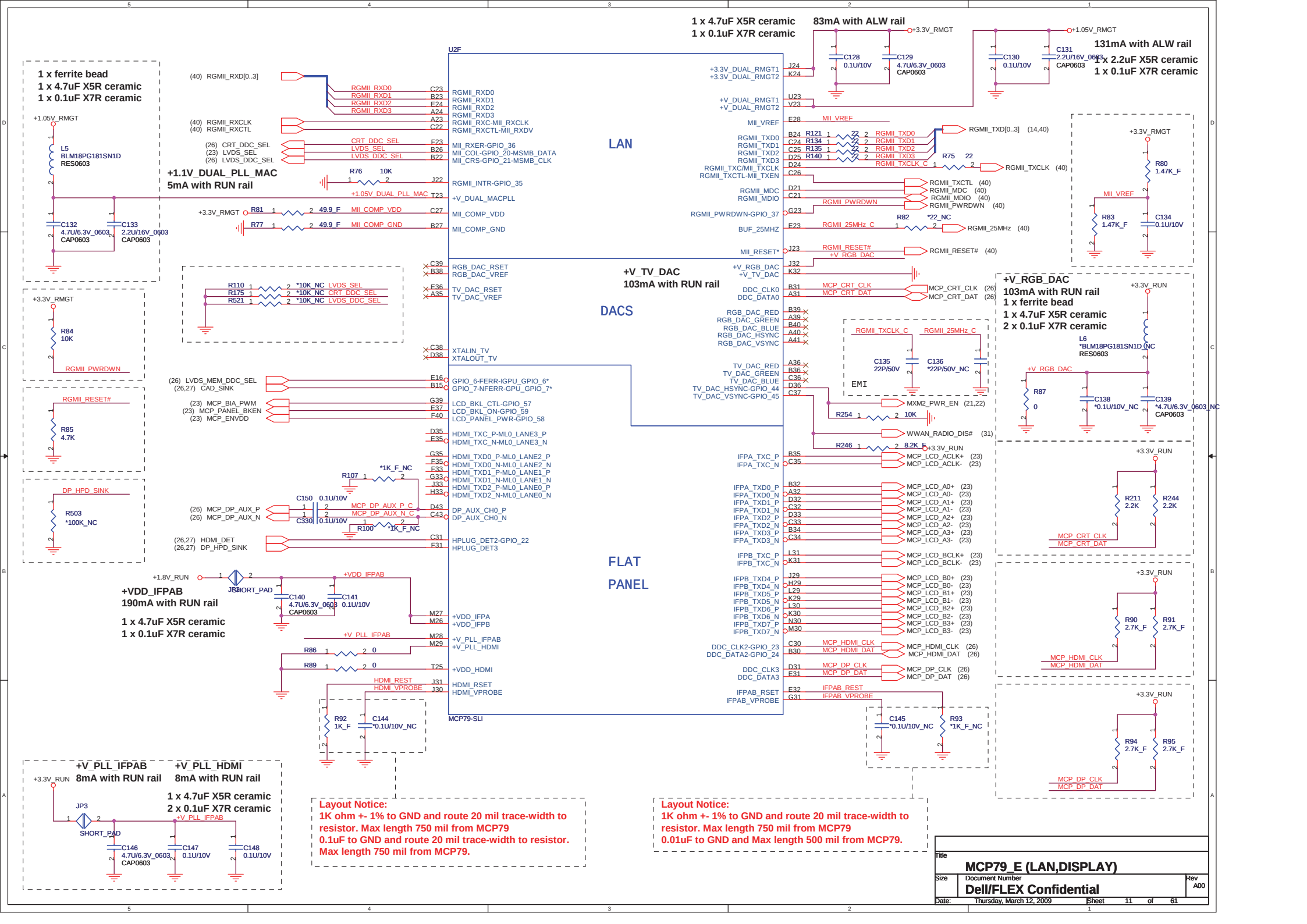
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
+1.1V_DUAL_PLL_MAC
5mA with RUN rail
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
83mA with ALW rail
131mA with ALW rail
1 x 2.2uF X5R ceramic
1 x 0.1uF X7R ceramic
+V_TV_DAC
103mA with RUN rail
+V_RGB_DAC
103mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
2 x 0.1uF X7R ceramic
+VDD_IFPAB
190mA with RUN rail
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
+V_PLL_IFPAB
8mA with RUN rail
+V_PLL_HDMI
8mA with RUN rail
1 x 4.7uF X5R ceramic
2 x 0.1uF X7R ceramic
LAN
DACS
FLAT
PANEL
MCP79-SLI
EMI
Layout Notice:
1K ohm +- 1% to GND and route 20 mil trace-width to resistor. Max length 750 mil from MCP79
0.1uF to GND and route 20 mil trace-width to resistor. Max length 750 mil from MCP79.
Layout Notice:
1K ohm +- 1% to GND and route 20 mil trace-width to resistor. Max length 750 mil from MCP79
0.01uF to GND and Max length 500 mil from MCP79.
MCP79_E (LAN,DISPLAY)
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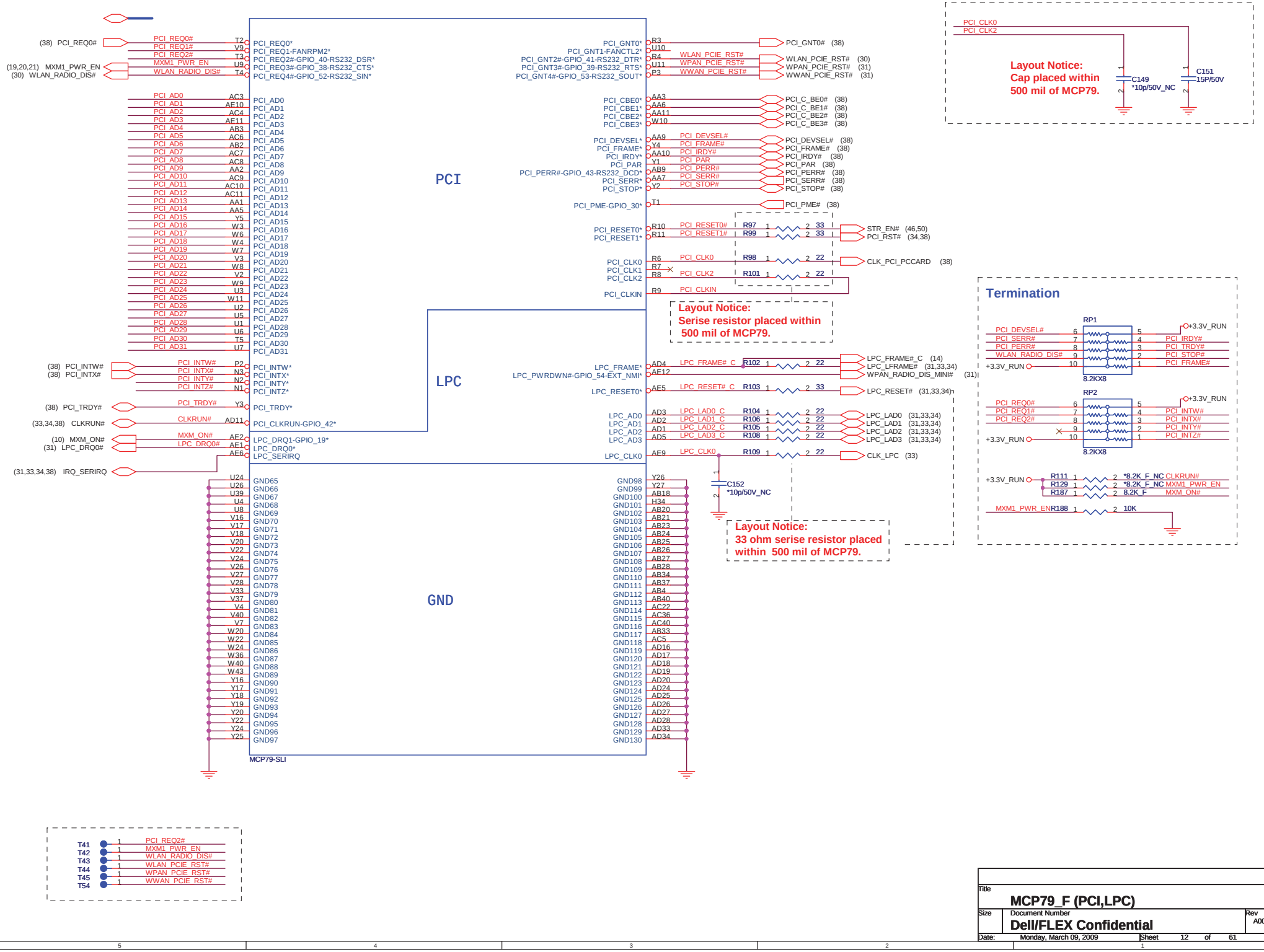
PCI
LPC
GND
MCP79-SLI
Layout Notice:
Cap placed within
500 mil of MCP79.
C149
*10p/50V_NC
C151
15P/50V
Layout Notice:
Serise resistor placed within
500 mil of MCP79.
C152
*10p/50V_NC
Layout Notice:
33 ohm serise resistor placed
within 500 mil of MCP79.
Termination
RP1
8.2KX8
RP2
8.2KX8
+3.3V_RUN
R111 *8.2K_F_NC CLKRUN#
R129 *8.2K_F_NC MXM1_PWR_EN
R187 8.2K_F MXM_ON#
MXM1_PWR_EN R188 10K
Title
MCP79_F (PCI,LPC)
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U2H

SATA

USB

MCP79-SLI

(29) SATA_TX0+ / (29) SATA_TX0- — C154 / C153 0.01U/16V — SATA_TX0+_C / SATA_TX0-_C — AJ7 / AJ6 — SATA_A0_TX_P / SATA_A0_TX_N

(29) SATA_RX0+ / (29) SATA_RX0- — AJ4 / AJ5 — SATA_A0_RX_P / SATA_A0_RX_N

(29) SATA_TX1+ / (29) SATA_TX1- — C155 / C156 0.01U/16V — SATA_TX1+_C / SATA_TX1-_C — AJ11 / AJ10 — SATA_A1_TX_P / SATA_A1_TX_N

(29) SATA_RX1+ / (29) SATA_RX1- — AK9 / AJ9 — SATA_A1_RX_P / SATA_A1_RX_N

(28) SATA_TX2+ / (28) SATA_TX2- — C158 / C157 0.01U/16V — SATA_TX2+_C / SATA_TX2-_C — AK2 / AJ3 — SATA_B0_TX_P / SATA_B0_TX_N

(28) SATA_RX2+ / (28) SATA_RX2- — AJ1 / AJ2 — SATA_B0_RX_P / SATA_B0_RX_N

(29) SATA_TX3+ / (29) SATA_TX3- — C160 / C159 0.01U/16V — SATA_TX3+_C / SATA_TX3-_C — AM4 / AL3 — SATA_B1_TX_P / SATA_B1_TX_N

(29) SATA_RX3+ / (29) SATA_RX3- — AK3 / AL4 — SATA_B1_RX_P / SATA_B1_RX_N

AN1 / AM1 — SATA_C0_TX_P / SATA_C0_TX_N

AM3 / AM2 — SATA_C0_RX_P / SATA_C0_RX_N

AP3 / AP2 — SATA_C1_TX_P / SATA_C1_TX_N

AN2 / AN3 — SATA_C1_RX_P / SATA_C1_RX_N

SATA Layout Notice:
BGA Breakout:
Route differentially at normal impedance and 4 mils within pair and 6 mils to other signals.Maximum brackout distance is 400 mils of MCP79.
BGA Fan-out:
Route differentially at normal impedance and 4 mils within pair and 10 mils to other signals.Maximum BGA brackout plus Fan-out distance is 500 mils.
After Brackout:
Route at 100 ohm differential impedance (50 ohm SE) and 3x dielectric height spacing to other signals.
TX and RX intra-pair skew for a differential pair is 5 mils.

+3.3V_RUN — R571 10K — E12 SATA_LED*

(33,35) SATA_ACT#

+V_PLL_SATA — AE16 +V_PLL_SATA

+1.05V_RUN

AF19 +DVDD0_SATA1
AG16 +DVDD0_SATA2
AG17 +DVDD0_SATA3
AG19 +DVDD0_SATA4

+DVDD0_SATA
117mA with RUN rail
1 x 2.2uF X5R ceramic
1 x 0.1uF X7R ceramic

C164 2.2U/16V_0603 CAP0603 — C431 0.1U/10V

AH17 +DVDD1_SATA1
AH19 +DVDD1_SATA2

AJ12 +AVDD0_SATA1
AN11 +AVDD0_SATA2
AK12 +AVDD0_SATA3
AK13 +AVDD0_SATA4
AL12 +AVDD0_SATA5
AM11 +AVDD0_SATA6
AM12 +AVDD0_SATA7
AN12 +AVDD0_SATA8
AL13 +AVDD0_SATA9

L8 BLM18PG181SN1D RES0603 — +AVDD0_SATA

+AVDD0_SATA
363mA with RUN rail
1x ferrite bead
1x 10uF
1 x 2.2uF X5R ceramic
3 x 0.1uF X7R ceramic

C165 10U/6.3V_0805 CAP0805 — C166 2.2U/16V_0603 CAP0603 — C167 0.1U/10V — C168 0.1U/10V — C174 0.1U/10V

AN14 +AVDD1_SATA1
AL14 +AVDD1_SATA2
AM13 +AVDD1_SATA3
AM14 +AVDD1_SATA4

AE3 SATA_TERMP — SATA_TERMP — R122 2.49K_F

Layout Notice:
2.49K ohm to GND within 500 mils of MCP79.
Routing 8 mils spacing to resistor.

Left Side USB0_P / USB0_N — C29 MCP_USB0+ / D29 MCP_USB0- — MCP_USB0+ (28) / MCP_USB0- (28)

Left Side USB1_P / USB1_N — C28 MCP_USB1+ / D28 MCP_USB1- — MCP_USB1+ (28) / MCP_USB1- (28)

Combo (eSATA/USB) USB2_P / USB2_N — A28 MCP_USB2+ / B28 MCP_USB2- — MCP_USB2+ (28) / MCP_USB2- (28)

ESA B/D USB3_P / USB3_N — F29 MCP_USB3+ / G29 MCP_USB3- — MCP_USB3+ (36) / MCP_USB3- (36)

Mini Card (WLAN) USB4_P / USB4_N — K27 MCP_USB4+ / L27 MCP_USB4- — MCP_USB4+ (30) / MCP_USB4- (30)

Mini Card (WWAN) USB5_P / USB5_N — J26 MCP_USB5+ / J27 MCP_USB5- — MCP_USB5+ (31) / MCP_USB5- (31)

Mini Card (WPAN) USB6_P / USB6_N — F27 MCP_USB6+ / G27 MCP_USB6- — MCP_USB6+ (31) / MCP_USB6- (31)

Express Card USB7_P / USB7_N — D27 MCP_USB7+ / E27 MCP_USB7- — MCP_USB7+ (39) / MCP_USB7- (39)

DB Side USB8_P / USB8_N — K25 MCP_USB8+ / L25 MCP_USB8- — MCP_USB8+ (39) / MCP_USB8- (39)

DB Side USB9_P / USB9_N — H25 MCP_USB9+ / J25 MCP_USB9- — MCP_USB9+ (39) / MCP_USB9- (39)

USB10_P / USB10_N — F25 / G25

Camera USB11_P / USB11_N — K23 MCP_USB11+ / L23 MCP_USB11- — MCP_USB11+ (24) / MCP_USB11- (24)

+3.3V_SUS — MEM_HOT#_R — R194 2.7K_F

USB_OC0# (28) / USB_OC1# (28)

USB_OC0-GPIO_25* — L21
USB_OC1-GPIO_26* — K21
USB_OC2/GPIO_27-MGPIO* — J21
USB_OC3/GPIO_28-MGPIO* — H21

MEM_HOT#_R — R117 0 — USB_OC2# (39) / MEM_HOT# (17,18)

R116 10K — +3.3V_SUS

+3.3V_RUN — L7 BLM18PG181SN1D RES0603

+V_PLL_USB — L28 +V_PLL_USB

+V_PLL_USB
18mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

C161 2.2U/16V_0603 CAP0603 — C162 4.7U/6.3V_0603 CAP0603

USB_RBIAS_GND — A27 USB_RBIAS_GND — R119 806_F

GND131 AD35
GND132 AD37
GND133 AD38
GND134 AE22
GND135 AE24
GND136 AE39
GND137 AE4
GND138 AD6
GND139 AE16
GND140 AE17
GND141 AE18
GND142 AE20
GND143 AE22
GND144 AE26
GND145 AE27
GND146 AE28
GND147 AE33
GND148 AE34
GND149 AE37
GND150 AE40
GND151 AG18
GND152 AG20
GND153 AG22
GND154 AG26
GND155 AG36
GND156 AG40
GND157 AH18
GND158 AH20
GND159 AH22
GND160 AH24

Layout Notice:
806 ohm +-1% to GND within 1000 mil of MCP79.
Routing trace at least 8 mil wide to resistor.

+1.05V_RUN — L9 BLM18PG181SN1D RES0603 — +V_PLL_SATA

C169 1U/10V_0603 CAP0603 — C170 4.7U/6.3V_0603 CAP0603 — C171 2.2U/16V_0603 CAP0603

+V_PLL_SATA
163mA with RUN rail
1x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

USB Layout Notice:
BGA Breakout:
Route differentially at normal impedance and 4 mils within pair and 6 mils to other signals.Maximum brackout distance is 300 mils of MCP79.
BGA Fan-out:
Route differentially at normal impedance and 4 mils within pair and 10 mils to other signals.Maximum BGA brackout plus Fan-out distance is 400 mils.
After Brackout:
Route at 100 ohm differential impedance (50 ohm SE) and 4x dielectric height spacing (Microstrip) or 2x dielectric height spacing (Stripline) to other signals.
Each USB pair must be length metched to within 50 mil.

Title	MCP79_G (SATA,USB)	
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+V_DUAL_HDA 1 x 4.7uF X5R ceramic
7mA with ALW rail 2 x 0.1uF X7R ceramic

+V_PLL_NV_H
20mA with RUN rail
+V_PLL_SP_SPREF
17mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
2 x 0.1uF X7R ceramic

U2I

HDA

MISC

MCP79-SLI

MCP79 Strapping

Boot BIOS Strapping		
	HDA_SDATA_OUT	LPC_FRAME#
LPC BIOS	0	0
PCI BIOS	0	1
SPI BIOS(CS0)	1	0
SPI BIOS(CS1)	1	1

SIO Clock Select	
	HDA_SYNC
14.318MHz	0
24MHz	1

SPI CLK Frequency Select		
	SPI_DO	SPI_CLK
31MHz	0	0
41MHz	0	1
25MHz	1	0
1MHz	1	1

CLEAR CMOS ONLY	
	RTC_RST#
CLEAR	0
NORMAL	1

Boot Mode Select	
User Mode	0
Safe Mode	1

Networking Select	
MII	0
RGMII	1

Layout Notice:
Place cystal within 1000 mil of MCP79.

Remember to connect to Power circuit

Title: MCP79_H (HDA,MISC)
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17.756A with RUN rail for S0
2850mA for S0 Idle

1 x 10uF ceramic
2 x 2.2uF X5R ceramic
3 x 1uF X5R ceramic
3 x 0.22uF X5R ceramic
12 x 0.1uF X7R ceramic

+MCP_CORE

C190 10U/10V_0805 CAP0805
C191 2.2U/16V_0603 CAP0603
C192 1U/6.3V
C193 1U/6.3V
C194 1U/6.3V
C198 2.2U/16V_0603 CAP0603
C199 0.22U/10V
C200 0.22U/10V
C201 0.22U/10V
C203 0.1U/10V
C189 0.1U/10V
C205 0.1U/10V
C206 0.1U/10V
C207 0.1U/10V
C211 0.1U/10V
C212 0.1U/10V
C213 0.1U/10V
C215 0.1U/10V
C216 0.1U/10V
C434 0.1U/10V
C433 0.1U/10V
C438 0.1U/10V
C435 0.1U/10V
C437 0.1U/10V

U2J

PWR

AA25 AC23 U25 AH12 AG10 AG5 Y21 Y23 AA16 AA26 AA27 AA28 AC16 AC17 AC18 AC19 AC20 AC21 AA17 AC24 AC25 AC26 AC27 AC28 AD21 AD23 W27 V25 AA18 AE19 AE21 AF23 AE25 AE26 AE27 AE28 AF10 AF11 AA19 AF2 AF21 AF23 AF25 AF3 AF4 AF7 AH23 AF9 AA20 AG11 AG12 AG21 AG23 AG25 AG3 AG4 AA21 AG6 AG7 AG8 AC9 AH1 AH10 AH11 W26 AH2 AA23 W28 AH25 AH21 AH3 AH4 AH5 AH6 AH7 AH9 AA24 W21 W23 W25 AF12

+VDD_CORE1 +VDD_CORE2 +VDD_CORE3 +VDD_CORE4 +VDD_CORE5 +VDD_CORE6 +VDD_CORE7 +VDD_CORE8 +VDD_CORE9 +VDD_CORE10 +VDD_CORE11 +VDD_CORE12 +VDD_CORE13 +VDD_CORE14 +VDD_CORE15 +VDD_CORE16 +VDD_CORE17 +VDD_CORE18 +VDD_CORE19 +VDD_CORE20 +VDD_CORE21 +VDD_CORE22 +VDD_CORE23 +VDD_CORE24 +VDD_CORE25 +VDD_CORE26 +VDD_CORE27 +VDD_CORE28 +VDD_CORE29 +VDD_CORE30 +VDD_CORE31 +VDD_CORE32 +VDD_CORE33 +VDD_CORE34 +VDD_CORE35 +VDD_CORE36 +VDD_CORE37 +VDD_CORE38 +VDD_CORE39 +VDD_CORE40 +VDD_CORE41 +VDD_CORE42 +VDD_CORE43 +VDD_CORE44 +VDD_CORE45 +VDD_CORE46 +VDD_CORE47 +VDD_CORE48 +VDD_CORE49 +VDD_CORE50 +VDD_CORE51 +VDD_CORE52 +VDD_CORE53 +VDD_CORE54 +VDD_CORE55 +VDD_CORE56 +VDD_CORE57 +VDD_CORE58 +VDD_CORE59 +VDD_CORE60 +VDD_CORE61 +VDD_CORE62 +VDD_CORE63 +VDD_CORE64 +VDD_CORE65 +VDD_CORE66 +VDD_CORE67 +VDD_CORE68 +VDD_CORE69 +VDD_CORE70 +VDD_CORE71 +VDD_CORE72 +VDD_CORE73 +VDD_CORE74 +VDD_CORE75 +VDD_CORE76 +VDD_CORE77 +VDD_CORE78 +VDD_CORE79 +VDD_CORE80 +VDD_CORE81

+VTT_CPU
1139mA for ALW rail

+VTT_CPUCLK
43mA for ALW rail

1 x 10uF ceramic
1 x 2.2uF X5R ceramic
3 x 0.1uF X7R ceramic

+VTT_CPU1 +VTT_CPU2 +VTT_CPU3 +VTT_CPU4 +VTT_CPU5 +VTT_CPU6 +VTT_CPU7 +VTT_CPU8 +VTT_CPU9 +VTT_CPU10 +VTT_CPU11 +VTT_CPU12 +VTT_CPU13 +VTT_CPU14 +VTT_CPU15 +VTT_CPU16 +VTT_CPU17 +VTT_CPU18 +VTT_CPU19 +VTT_CPU20 +VTT_CPU21 +VTT_CPU22 +VTT_CPU23 +VTT_CPU24 +VTT_CPU25 +VTT_CPU26 +VTT_CPU27 +VTT_CPU28 +VTT_CPU29 +VTT_CPU30 +VTT_CPU31 +VTT_CPU32 +VTT_CPU33 +VTT_CPU34 +VTT_CPU35 +VTT_CPU36 +VTT_CPU37 +VTT_CPU38 +VTT_CPU39 +VTT_CPU40 +VTT_CPU41 +VTT_CPU42 +VTT_CPU43 +VTT_CPU44 +VTT_CPU45 +VTT_CPU46 +VTT_CPU47 +VTT_CPU48 +VTT_CPU49 +VTT_CPU50 +VTT_CPU51 +VTT_CPU52

R32 AC32 E40 J36 N32 T32 U32 V32 W32 P31 AF32 AE32 AH32 AJ32 AK31 AK32 AD32 AL31 AB32 B41 B42 C40 C41 C42 D39 D40 D41 E38 E39 F37 F38 F39 G36 G37 G38 H35 H37 J34 J35 K33 K34 K35 L32 L33 L34 M31 M32 M33 N31 P32 Y32 AA32

+1.05V_VCCP

C195 0.1U/10V
C196 2.2U/16V_0603 CAP0603
C197 10U/10V_0805 CAP0805
C202 0.1U/10V
C208 0.1U/10V
C209 0.1U/10V
C210 0.1U/10V
C218 0.1U/10V
C219 0.1U/10V
C314 0.1U/10V
C422 0.1U/10V
C423 0.1U/10V

+VTT_CPUCLK AG32

+3.3V_RUN_MCP
450mA with RUN rail

1 x 4.7uF X5R ceramic
4 x 0.1uF X7R ceramic

+3.3V_1 +3.3V_2 +3.3V_3 +3.3V_4 +3.3V_5 +3.3V_6 +3.3V_7 +3.3V_8

AD10 AE8 AB10 AD9 Y10 AB11 AA8 Y9

+3.3V_RUN_MCP

C220 0.1U/10V
C221 0.1U/10V
C222 0.1U/10V
C223 0.1U/10V
C224 4.7U/6.3V_0603 CAP0603

JP5 SHORT_PAD +3.3V_RUN

+3.3V_DUAL1 +3.3V_DUAL2 +3.3V_DUAL3 +3.3V_DUAL4

G18 H19 J20 K20

+3.3V_DUAL

C225 0.1U/10V
C226 4.7U/6.3V_0603 CAP0603

JP6 SHORT_PAD +3.3V_SUS

+3.3V_DUAL
16mA with ALW rail

1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

+3.3V_DUAL_USB1 +3.3V_DUAL_USB2 +3.3V_DUAL_USB3 +3.3V_DUAL_USB4

G26 H27 J28 K28

+3.3V_DUAL_USB
450mA with ALW rail

+VDD_AUXC1 +VDD_AUXC2 +VDD_AUXC3

T21 U21 V21

+VDD_AUXC

C230 0.1U/10V
C231 0.1U/10V

JP7 SHORT_PAD +1.05V_SUS

+VDD_AUXC
105mA with ALW rail

2 x 0.1uF X7R ceramic

These are for backdrive issue.

+3.3V_RUN +3.3V_RUN

R165 2.7K_F
R166 2.7K_F

(14) MCP_SMB_SCL_R
MCP_SMB_SCL
MCP_SMB_SCL (30,31,39)

Q6 2N7002W-7-F

(14) MCP_SMB_SDA_R
MCP_SMB_SDA
MCP_SMB_SDA (30,31,39)

Q7 2N7002W-7-F

HDCP

+3.3V_RUN +3.3V_RUN +3.3V_RUN

R167 *10K_NC
R168 *10K_NC
R169 *10K_NC

U4
NC_1 NC_2 NC_3 VCC M1 SDA SCL WP GND
*AT24C16BN-SH-T_NC

MCP_SMB_SDA
MCP_SMB_SCL

C232 *0.1U/10V_NC

+RTC_CELL

C227 4.7U/6.3V_0603
C228 4.7U/6.3V_0603
C229 0.1U/10V

A20 +VBAT

MCP79-SLI

0.06mA with ALW rail for S0

2 x 4.7uF X5R ceramic
1 X 0.1uF X7R ceramc

Title	MCP79_I (POWER)	
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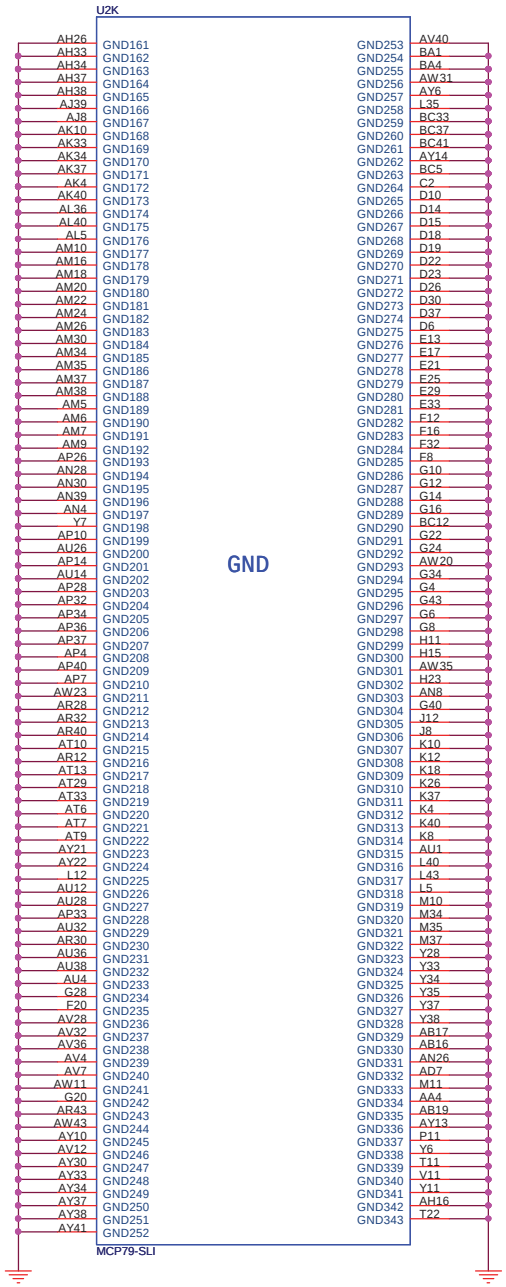

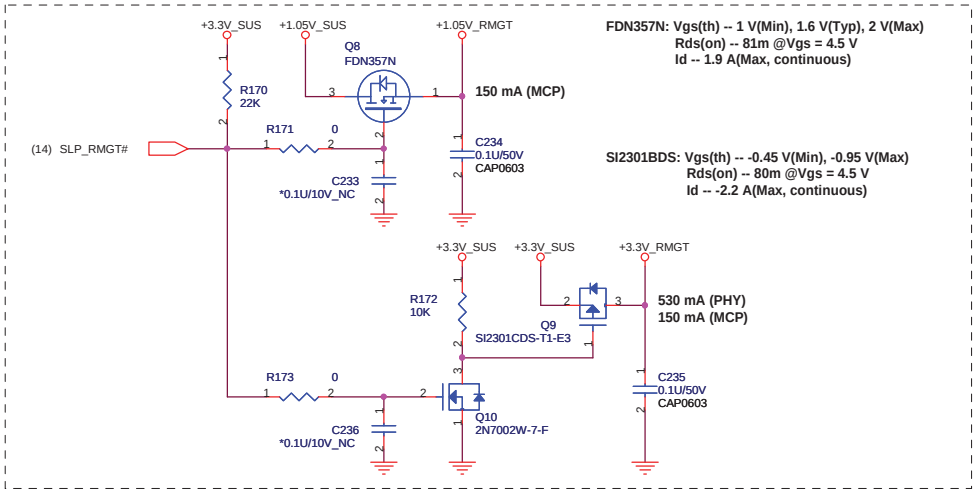

Title	MCP79_J (GND)	
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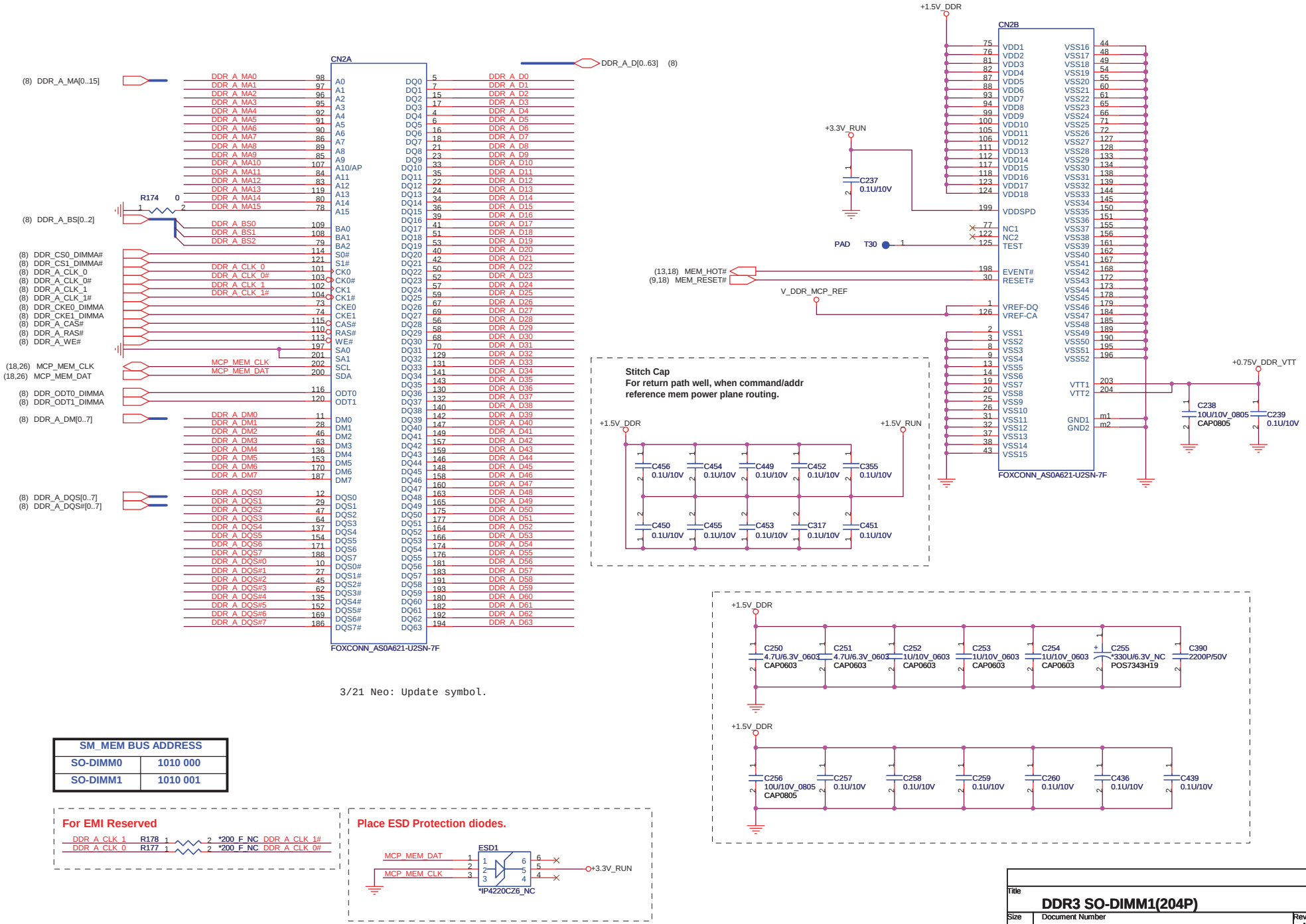
CN2A
CN2B
DDR_A_D[0..63] (8)
(8) DDR_A_MA[0..15]
(8) DDR_A_BS[0..2]
(8) DDR_CS0_DIMMA#
(8) DDR_CS1_DIMMA#
(8) DDR_A_CLK_0
(8) DDR_A_CLK_0#
(8) DDR_A_CLK_1
(8) DDR_A_CLK_1#
(8) DDR_CKE0_DIMMA
(8) DDR_CKE1_DIMMA
(8) DDR_A_CAS#
(8) DDR_A_RAS#
(8) DDR_A_WE#
(18,26) MCP_MEM_CLK
(18,26) MCP_MEM_DAT
(8) DDR_ODT0_DIMMA
(8) DDR_ODT1_DIMMA
(8) DDR_A_DM[0..7]
(8) DDR_A_DQS[0..7]
(8) DDR_A_DQS#[0..7]
R174 0
FOXCONN_AS0A621-U2SN-7F
+1.5V_DDR
+3.3V_RUN
C237 0.1U/10V
PAD T30
(13,18) MEM_HOT#
(9,18) MEM_RESET#
V_DDR_MCP_REF
FOXCONN_AS0A621-U2SN-7F
+0.75V_DDR_VTT
C238 10U/10V_0805 CAP0805
C239 0.1U/10V
Stitch Cap
For return path well, when command/addr reference mem power plane routing.
+1.5V_DDR
+1.5V_RUN
C456 0.1U/10V
C454 0.1U/10V
C449 0.1U/10V
C452 0.1U/10V
C355 0.1U/10V
C450 0.1U/10V
C455 0.1U/10V
C453 0.1U/10V
C317 0.1U/10V
C451 0.1U/10V
+1.5V_DDR
C250 4.7U/6.3V_0603 CAP0603
C251 4.7U/6.3V_0603 CAP0603
C252 1U/10V_0603 CAP0603
C253 1U/10V_0603 CAP0603
C254 1U/10V_0603 CAP0603
C255 *330U/6.3V_NC POS7343H19
C390 2200P/50V
+1.5V_DDR
C256 10U/10V_0805 CAP0805
C257 0.1U/10V
C258 0.1U/10V
C259 0.1U/10V
C260 0.1U/10V
C436 0.1U/10V
C439 0.1U/10V
3/21 Neo: Update symbol.
SM_MEM BUS ADDRESS
SO-DIMM0 1010 000
SO-DIMM1 1010 001
For EMI Reserved
DDR_A_CLK_1 R178 *200_F_NC DDR_A_CLK_1#
DDR_A_CLK_0 R177 *200_F_NC DDR_A_CLK_0#
Place ESD Protection diodes.
MCP_MEM_DAT
MCP_MEM_CLK
ESD1
*IP4220CZ6_NC
+3.3V_RUN
Title
DDR3 SO-DIMM1(204P)
Size
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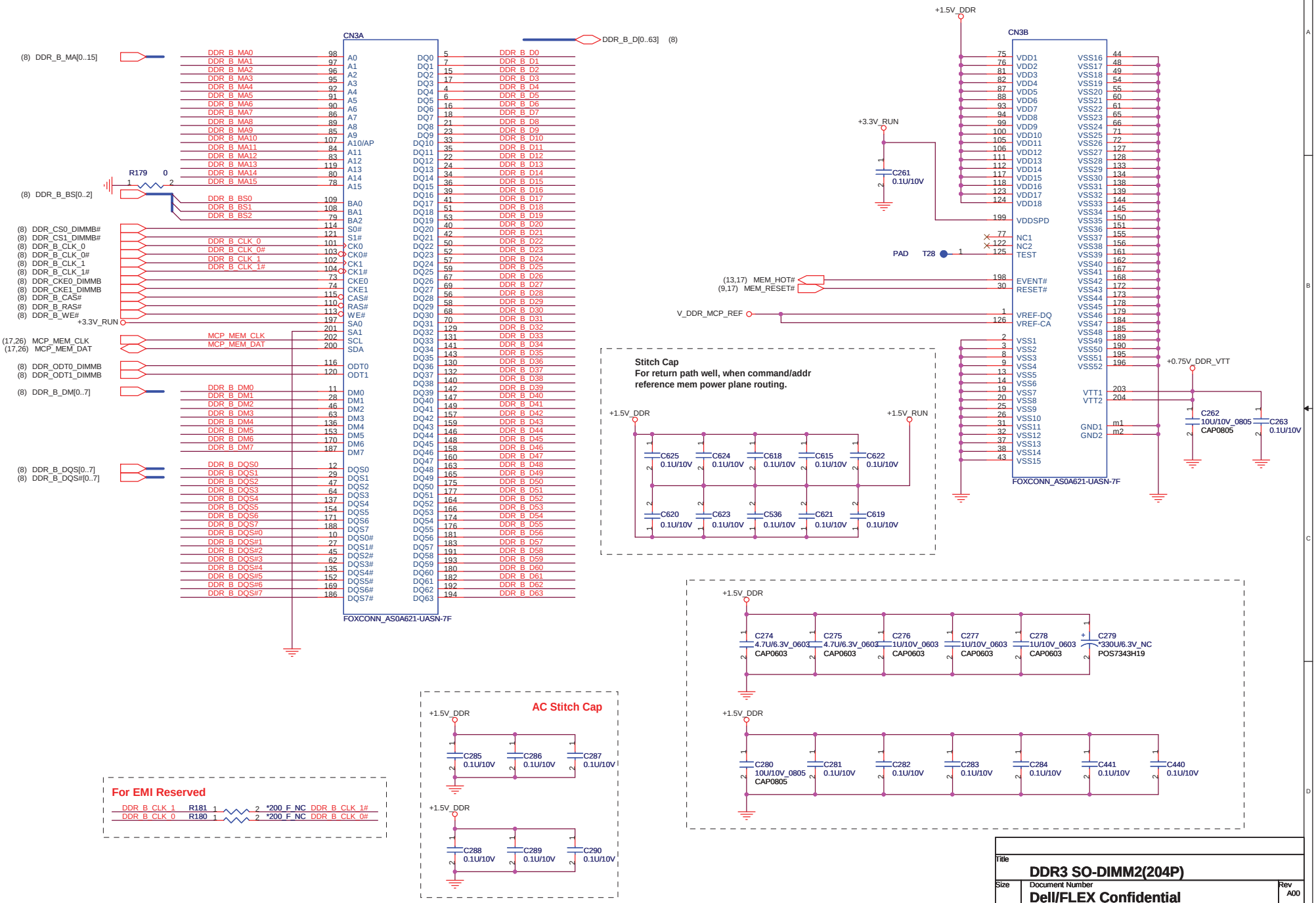

Title	DDR3 SO-DIMM2(204P)	
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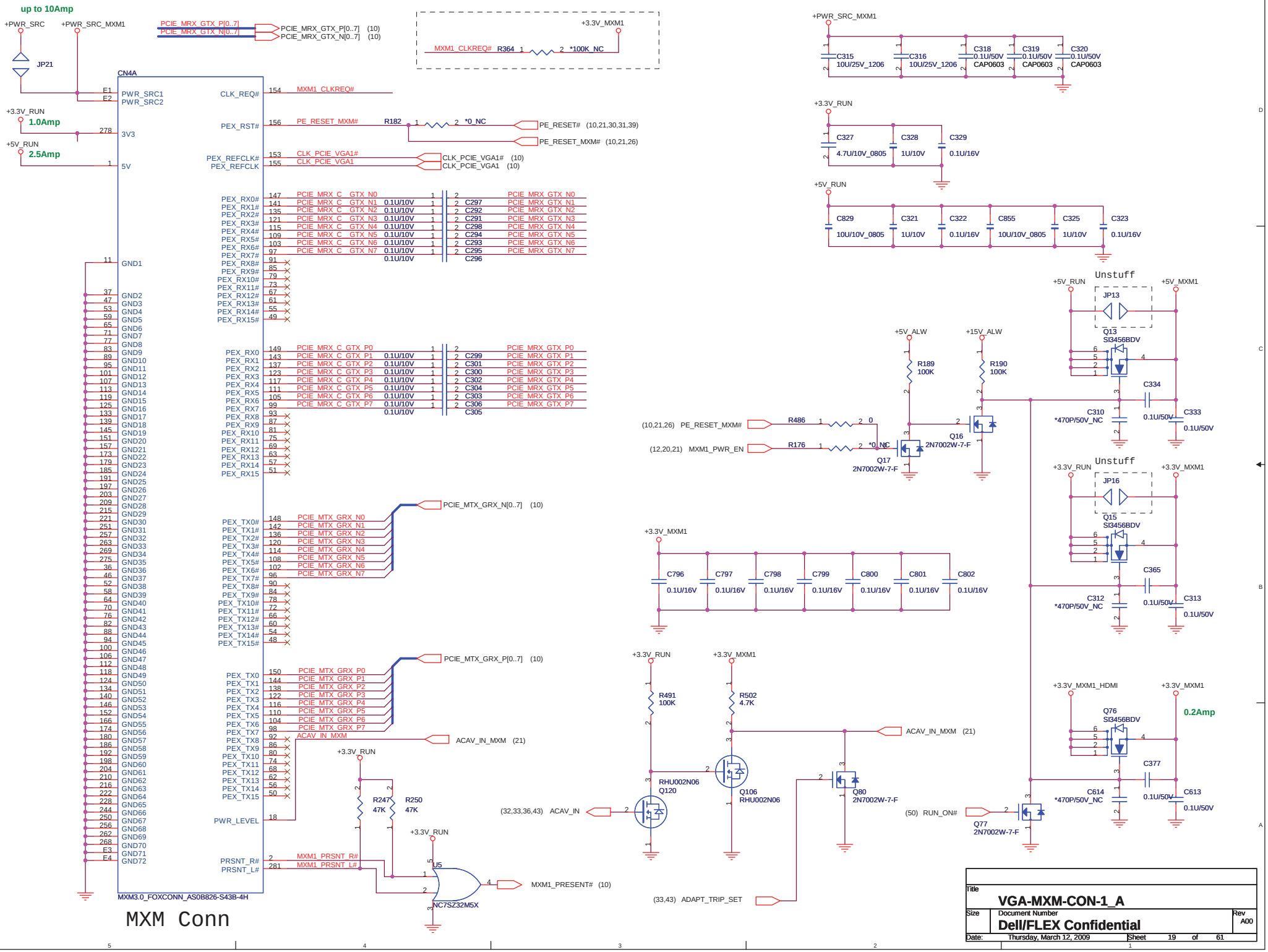
up to 10Amp
+PWR_SRC
+PWR_SRC_MXM1
JP21
CN4A
PWR_SRC1
PWR_SRC2
+3.3V_RUN
1.0Amp
3V3
+5V_RUN
2.5Amp
5V
PCIE_MRX_GTX_P[0..7]
PCIE_MRX_GTX_N[0..7]
PCIE_MRX_GTX_P[0..7] (10)
PCIE_MRX_GTX_N[0..7] (10)
+3.3V_MXM1
MXM1_CLKREQ# R364 *100K_NC
CLK_REQ#
MXM1_CLKREQ#
PEX_RST#
PE_RESET_MXM#
R182 *0_NC
PE_RESET# (10,21,30,31,39)
PE_RESET_MXM# (10,21,26)
PEX_REFCLK#
PEX_REFCLK
CLK_PCIE_VGA1#
CLK_PCIE_VGA1
CLK_PCIE_VGA1# (10)
CLK_PCIE_VGA1 (10)
PEX_RX0#
PEX_RX1#
PEX_RX2#
PEX_RX3#
PEX_RX4#
PEX_RX5#
PEX_RX6#
PEX_RX7#
PEX_RX8#
PEX_RX9#
PEX_RX10#
PEX_RX11#
PEX_RX12#
PEX_RX13#
PEX_RX14#
PEX_RX15#
PCIE_MRX_C_GTX_N0
PCIE_MRX_C_GTX_N1
PCIE_MRX_C_GTX_N2
PCIE_MRX_C_GTX_N3
PCIE_MRX_C_GTX_N4
PCIE_MRX_C_GTX_N5
PCIE_MRX_C_GTX_N6
PCIE_MRX_C_GTX_N7
0.1U/10V
C297
C292
C291
C298
C294
C293
C295
C296
PCIE_MRX_GTX_N0
PCIE_MRX_GTX_N1
PCIE_MRX_GTX_N2
PCIE_MRX_GTX_N3
PCIE_MRX_GTX_N4
PCIE_MRX_GTX_N5
PCIE_MRX_GTX_N6
PCIE_MRX_GTX_N7
PCIE_MRX_C_GTX_P0
PCIE_MRX_C_GTX_P1
PCIE_MRX_C_GTX_P2
PCIE_MRX_C_GTX_P3
PCIE_MRX_C_GTX_P4
PCIE_MRX_C_GTX_P5
PCIE_MRX_C_GTX_P6
PCIE_MRX_C_GTX_P7
C299
C301
C300
C302
C304
C303
C306
C305
PCIE_MRX_GTX_P0
PCIE_MRX_GTX_P1
PCIE_MRX_GTX_P2
PCIE_MRX_GTX_P3
PCIE_MRX_GTX_P4
PCIE_MRX_GTX_P5
PCIE_MRX_GTX_P6
PCIE_MRX_GTX_P7
PEX_TX0#
PEX_TX1#
PEX_TX2#
PEX_TX3#
PEX_TX4#
PEX_TX5#
PEX_TX6#
PEX_TX7#
PEX_TX8#
PEX_TX9#
PEX_TX10#
PEX_TX11#
PEX_TX12#
PEX_TX13#
PEX_TX14#
PEX_TX15#
PCIE_MTX_GRX_N0
PCIE_MTX_GRX_N1
PCIE_MTX_GRX_N2
PCIE_MTX_GRX_N3
PCIE_MTX_GRX_N4
PCIE_MTX_GRX_N5
PCIE_MTX_GRX_N6
PCIE_MTX_GRX_N7
PCIE_MTX_GRX_N[0..7] (10)
PCIE_MTX_GRX_P0
PCIE_MTX_GRX_P1
PCIE_MTX_GRX_P2
PCIE_MTX_GRX_P3
PCIE_MTX_GRX_P4
PCIE_MTX_GRX_P5
PCIE_MTX_GRX_P6
PCIE_MTX_GRX_P7
PCIE_MTX_GRX_P[0..7] (10)
ACAV_IN_MXM
ACAV_IN_MXM (21)
PWR_LEVEL
+3.3V_RUN
R247 47K
R250 47K
PRSNT_R#
PRSNT_L#
MXM1_PRSNT_R#
MXM1_PRSNT_L#
U5
NC7SZ32M5X
MXM1_PRESENT# (10)
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
GND11
GND12
GND13
GND14
GND15
GND16
GND17
GND18
GND19
GND20
GND21
GND22
GND23
GND24
GND25
GND26
GND27
GND28
GND29
GND30
GND31
GND32
GND33
GND34
GND35
GND36
GND37
GND38
GND39
GND40
GND41
GND42
GND43
GND44
GND45
GND46
GND47
GND48
GND49
GND50
GND51
GND52
GND53
GND54
GND55
GND56
GND57
GND58
GND59
GND60
GND61
GND62
GND63
GND64
GND65
GND66
GND67
GND68
GND69
GND70
GND71
GND72
MXM3.0_FOXCONN_AS0B826-S43B-4H
MXM Conn
+PWR_SRC_MXM1
C315 10U/25V_1206
C316 10U/25V_1206
C318 0.1U/50V CAP0603
C319 0.1U/50V CAP0603
C320 0.1U/50V CAP0603
+3.3V_RUN
C327 4.7U/10V_0805
C328 1U/10V
C329 0.1U/16V
+5V_RUN
C829 10U/10V_0805
C321 1U/10V
C322 0.1U/16V
C855 10U/10V_0805
C325 1U/10V
C323 0.1U/16V
Unstuff
+5V_RUN
+5V_MXM1
JP13
Q13 SI3456BDV
C334
C310 *470P/50V_NC
C333 0.1U/50V
+5V_ALW
+15V_ALW
R189 100K
R190 100K
(10,21,26) PE_RESET_MXM#
R486 0
(12,20,21) MXM1_PWR_EN
R176 *0_NC
Q16 2N7002W-7-F
Q17 2N7002W-7-F
+3.3V_MXM1
C796 0.1U/16V
C797 0.1U/16V
C798 0.1U/16V
C799 0.1U/16V
C800 0.1U/16V
C801 0.1U/16V
C802 0.1U/16V
+3.3V_RUN
+3.3V_MXM1
R491 100K
R502 4.7K
RHU002N06 Q120
Q106 RHU002N06
Q80 2N7002W-7-F
(32,33,36,43) ACAV_IN
ACAV_IN_MXM (21)
(33,43) ADAPT_TRIP_SET
+3.3V_RUN
+3.3V_MXM1
JP16
Q15 SI3456BDV
C365
C312 *470P/50V_NC
C313 0.1U/50V
+3.3V_MXM1_HDMI
+3.3V_MXM1
0.2Amp
Q76 SI3456BDV
C377
C614 *470P/50V_NC
C613 0.1U/50V
(50) RUN_ON#
Q77 2N7002W-7-F
Title
VGA-MXM-CON-1_A
Size
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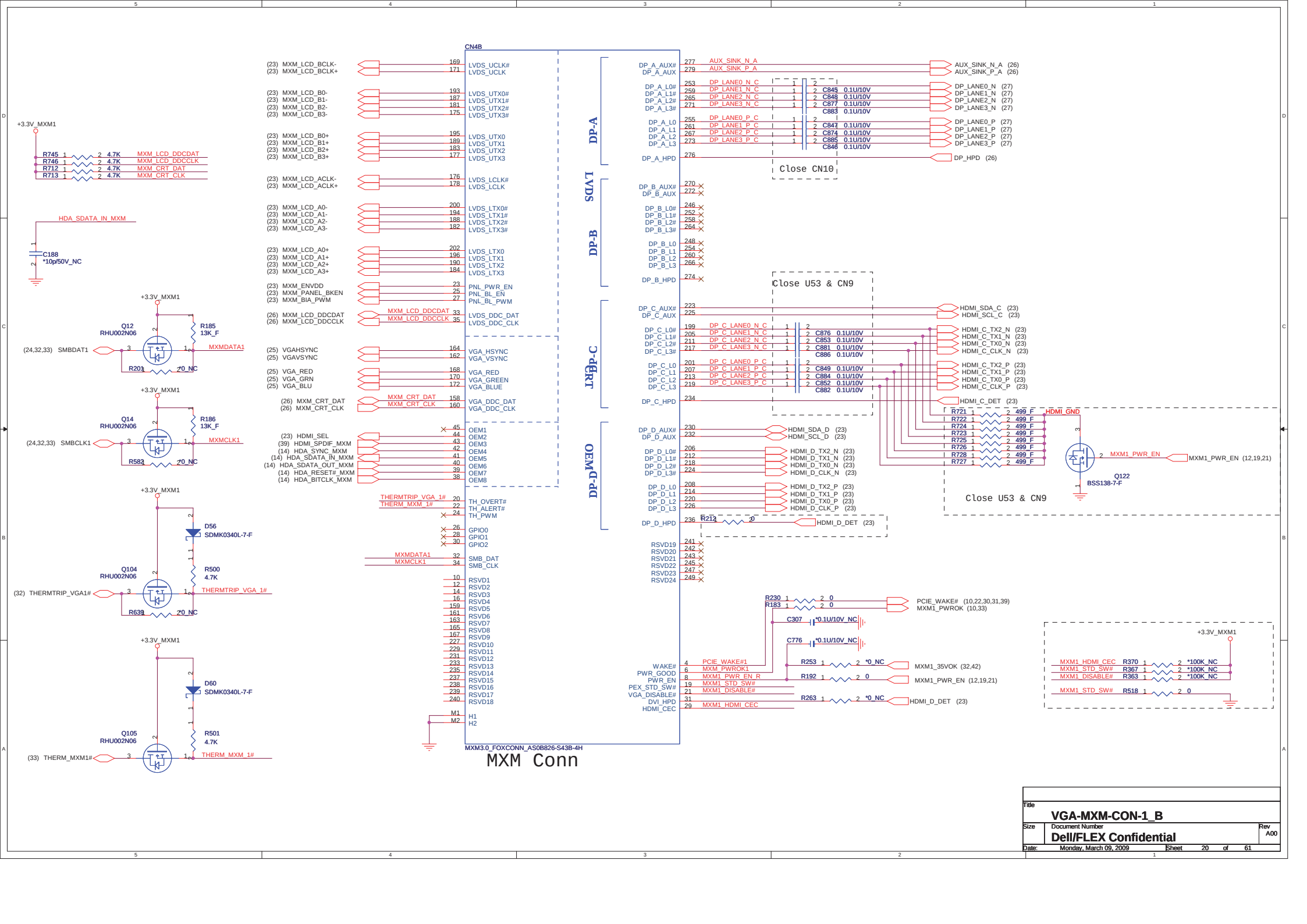
CN4B
MXM3.0_FOXCONN_AS0B826-S43B-4H
LVDS_UCLK#
LVDS_UCLK
LVDS_UTX0#
LVDS_UTX1#
LVDS_UTX2#
LVDS_UTX3#
LVDS_UTX0
LVDS_UTX1
LVDS_UTX2
LVDS_UTX3
LVDS_LCLK#
LVDS_LCLK
LVDS_LTX0#
LVDS_LTX1#
LVDS_LTX2#
LVDS_LTX3#
LVDS_LTX0
LVDS_LTX1
LVDS_LTX2
LVDS_LTX3
PNL_PWR_EN
PNL_BL_EN
PNL_BL_PWM
LVDS_DDC_DAT
LVDS_DDC_CLK
VGA_HSYNC
VGA_VSYNC
VGA_RED
VGA_GREEN
VGA_BLUE
VGA_DDC_DAT
VGA_DDC_CLK
OEM1
OEM2
OEM3
OEM4
OEM5
OEM6
OEM7
OEM8
TH_OVERT#
TH_ALERT#
TH_PWM
GPIO0
GPIO1
GPIO2
SMB_DAT
SMB_CLK
RSVD1
RSVD2
RSVD3
RSVD4
RSVD5
RSVD6
RSVD7
RSVD8
RSVD9
RSVD10
RSVD11
RSVD12
RSVD13
RSVD14
RSVD15
RSVD16
RSVD17
RSVD18
H1
H2
DP-A
LVDS
DP-B
CRT
DP-C
OEM-D
DP_A_AUX#
DP_A_AUX
DP_A_L0#
DP_A_L1#
DP_A_L2#
DP_A_L3#
DP_A_L0
DP_A_L1
DP_A_L2
DP_A_L3
DP_A_HPD
DP_B_AUX#
DP_B_AUX
DP_B_L0#
DP_B_L1#
DP_B_L2#
DP_B_L3#
DP_B_L0
DP_B_L1
DP_B_L2
DP_B_L3
DP_B_HPD
DP_C_AUX#
DP_C_AUX
DP_C_L0#
DP_C_L1#
DP_C_L2#
DP_C_L3#
DP_C_L0
DP_C_L1
DP_C_L2
DP_C_L3
DP_C_HPD
DP_D_AUX#
DP_D_AUX
DP_D_L0#
DP_D_L1#
DP_D_L2#
DP_D_L3#
DP_D_L0
DP_D_L1
DP_D_L2
DP_D_L3
DP_D_HPD
RSVD19
RSVD20
RSVD21
RSVD22
RSVD23
RSVD24
WAKE#
PWR_GOOD
PWR_EN
PEX_STD_SW#
VGA_DISABLE#
DVI_HPD
HDMI_CEC
AUX_SINK_N_A
AUX_SINK_P_A
DP_LANE0_N_C
DP_LANE1_N_C
DP_LANE2_N_C
DP_LANE3_N_C
DP_LANE0_P_C
DP_LANE1_P_C
DP_LANE2_P_C
DP_LANE3_P_C
C845 0.1U/10V
C848 0.1U/10V
C877 0.1U/10V
C883 0.1U/10V
C847 0.1U/10V
C874 0.1U/10V
C885 0.1U/10V
C846 0.1U/10V
Close CN10
C876 0.1U/10V
C853 0.1U/10V
C881 0.1U/10V
C886 0.1U/10V
C849 0.1U/10V
C884 0.1U/10V
C852 0.1U/10V
C882 0.1U/10V
Close U53 & CN9
R212 0
R721 499_F
R722 499_F
R724 499_F
R723 499_F
R725 499_F
R726 499_F
R728 499_F
R727 499_F
HDMI_GND
Q122
BSS138-7-F
MXM1_PWR_EN
R230 0
R183 0
C307 *0.1U/10V_NC
C776 *0.1U/10V_NC
R253 *0_NC
R192 0
R263 *0_NC
PCIE_WAKE#
MXM1_PWROK1
MXM1_PWR_EN_R
MXM1_STD_SW#
MXM1_DISABLE#
MXM1_35VOK (32,42)
MXM1_PWR_EN (12,19,21)
HDMI_D_DET (23)
PCIE_WAKE# (10,22,30,31,39)
MXM1_PWROK (10,33)
+3.3V_MXM1
MXM1_HDMI_CEC R370 *100K_NC
MXM1_STD_SW# R367 *100K_NC
MXM1_DISABLE# R363 *100K_NC
MXM1_STD_SW# R518 0
R745 4.7K MXM_LCD_DDCDAT
R746 4.7K MXM_LCD_DDCCLK
R712 4.7K MXM_CRT_DAT
R713 4.7K MXM_CRT_CLK
HDA_SDATA_IN_MXM
C188 *10p/50V_NC
Q12 RHU002N06
R185 13K_F
R201 0_NC
SMBDATA1
MXMDATA1
Q14 RHU002N06
R186 13K_F
R582 0_NC
SMBCLK1
MXMCLK1
D56 SDMK0340L-7-F
Q104 RHU002N06
R500 4.7K
R639 0_NC
THERMTRIP_VGA1#
D60 SDMK0340L-7-F
Q105 RHU002N06
R501 4.7K
THERM_MXM_1#
MXM_LCD_BCLK-
MXM_LCD_BCLK+
MXM_LCD_B0-
MXM_LCD_B1-
MXM_LCD_B2-
MXM_LCD_B3-
MXM_LCD_B0+
MXM_LCD_B1+
MXM_LCD_B2+
MXM_LCD_B3+
MXM_LCD_ACLK-
MXM_LCD_ACLK+
MXM_LCD_A0-
MXM_LCD_A1-
MXM_LCD_A2-
MXM_LCD_A3-
MXM_LCD_A0+
MXM_LCD_A1+
MXM_LCD_A2+
MXM_LCD_A3+
MXM_ENVDD
MXM_PANEL_BKEN
MXM_BIA_PWM
MXM_LCD_DDCDAT
MXM_LCD_DDCCLK
MXM_CRT_DAT
MXM_CRT_CLK
HDMI_SEL
HDMI_SPDIF_MXM
HDA_SYNC_MXM
HDA_SDATA_IN_MXM
HDA_SDATA_OUT_MXM
HDA_RESET#_MXM
HDA_BITCLK_MXM
THERMTRIP_VGA_1#
THERM_MXM_1#
MXMDATA1
MXMCLK1
HDMI_SDA_C (23)
HDMI_SCL_C (23)
HDMI_C_TX2_N (23)
HDMI_C_TX1_N (23)
HDMI_C_TX0_N (23)
HDMI_C_CLK_N (23)
HDMI_C_TX2_P (23)
HDMI_C_TX1_P (23)
HDMI_C_TX0_P (23)
HDMI_C_CLK_P (23)
HDMI_C_DET (23)
HDMI_SDA_D (23)
HDMI_SCL_D (23)
HDMI_D_TX2_N (23)
HDMI_D_TX1_N (23)
HDMI_D_TX0_N (23)
HDMI_D_CLK_N (23)
HDMI_D_TX2_P (23)
HDMI_D_TX1_P (23)
HDMI_D_TX0_P (23)
HDMI_D_CLK_P (23)
MXM Conn
Title
VGA-MXM-CON-1_B
Size
Document Number
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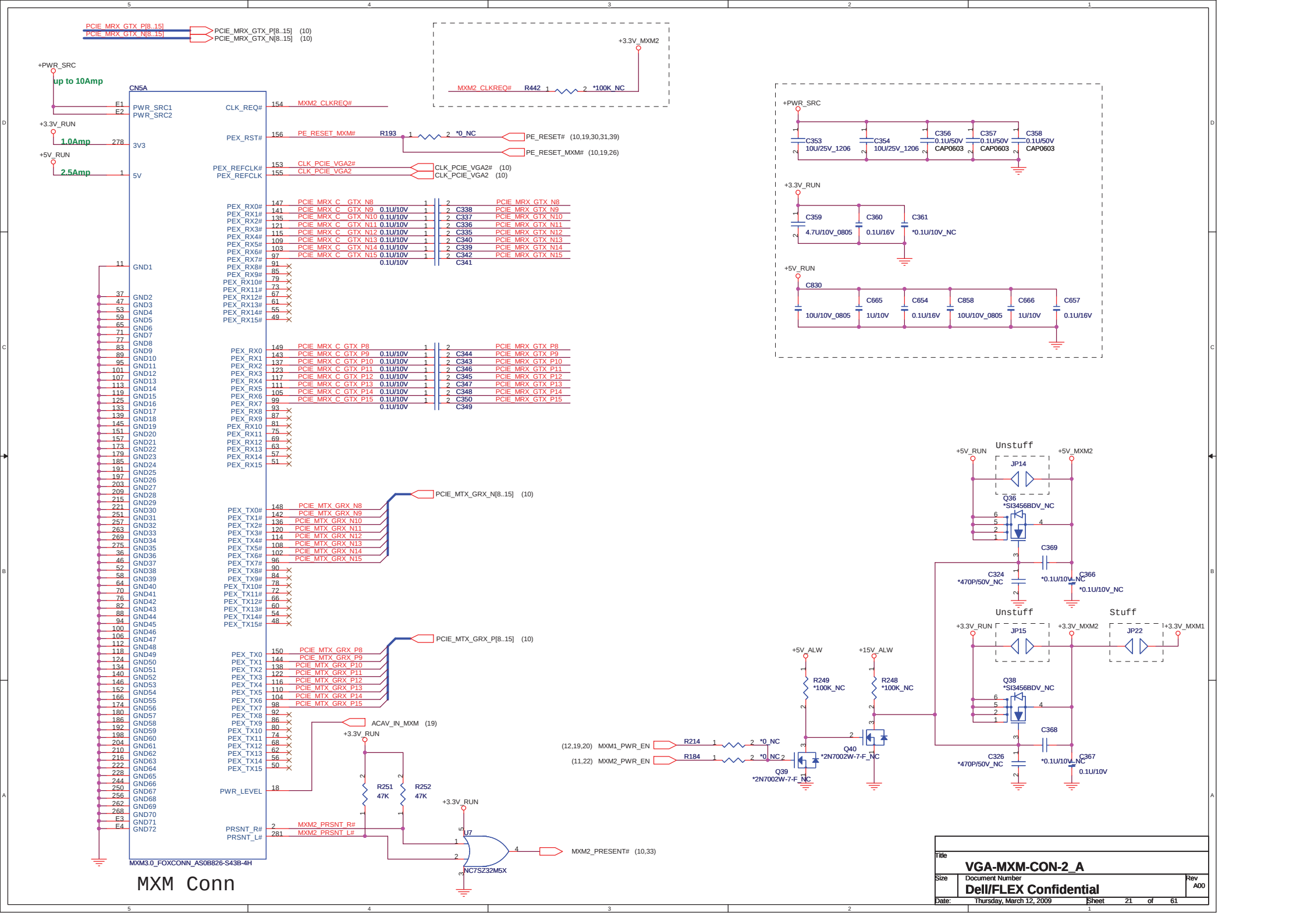
PCIE_MRX_GTX_P[8..15]
PCIE_MRX_GTX_N[8..15]
PCIE_MRX_GTX_P[8..15] (10)
PCIE_MRX_GTX_N[8..15] (10)
+3.3V_MXM2
MXM2_CLKREQ# R442 1 2 *100K_NC
+PWR_SRC
up to 10Amp
+3.3V_RUN
1.0Amp
+5V_RUN
2.5Amp
CN5A
E1 PWR_SRC1
E2 PWR_SRC2
278 3V3
1 5V
CLK_REQ# 154 MXM2_CLKREQ#
PEX_RST# 156 PE_RESET_MXM# R193 1 2 *0_NC
PE_RESET# (10,19,30,31,39)
PE_RESET_MXM# (10,19,26)
PEX_REFCLK# 153 CLK_PCIE_VGA2#
PEX_REFCLK 155 CLK_PCIE_VGA2
CLK_PCIE_VGA2# (10)
CLK_PCIE_VGA2 (10)
PEX_RX0# 147 PCIE_MRX_C_GTX_N8 1 2 PCIE_MRX_GTX_N8
PEX_RX1# 141 PCIE_MRX_C_GTX_N9 0.1U/10V 1 2 C338 PCIE_MRX_GTX_N9
PEX_RX2# 135 PCIE_MRX_C_GTX_N10 0.1U/10V 1 2 C337 PCIE_MRX_GTX_N10
PEX_RX3# 121 PCIE_MRX_C_GTX_N11 0.1U/10V 1 2 C336 PCIE_MRX_GTX_N11
PEX_RX4# 115 PCIE_MRX_C_GTX_N12 0.1U/10V 1 2 C335 PCIE_MRX_GTX_N12
PEX_RX5# 109 PCIE_MRX_C_GTX_N13 0.1U/10V 1 2 C340 PCIE_MRX_GTX_N13
PEX_RX6# 103 PCIE_MRX_C_GTX_N14 0.1U/10V 1 2 C339 PCIE_MRX_GTX_N14
PEX_RX7# 97 PCIE_MRX_C_GTX_N15 0.1U/10V 1 2 C342 PCIE_MRX_GTX_N15
0.1U/10V C341
PEX_RX8# 91
PEX_RX9# 85
PEX_RX10# 79
PEX_RX11# 73
PEX_RX12# 67
PEX_RX13# 61
PEX_RX14# 55
PEX_RX15# 49
PEX_RX0 149 PCIE_MRX_C_GTX_P8 1 2 PCIE_MRX_GTX_P8
PEX_RX1 143 PCIE_MRX_C_GTX_P9 0.1U/10V 1 2 C344 PCIE_MRX_GTX_P9
PEX_RX2 137 PCIE_MRX_C_GTX_P10 0.1U/10V 1 2 C343 PCIE_MRX_GTX_P10
PEX_RX3 123 PCIE_MRX_C_GTX_P11 0.1U/10V 1 2 C346 PCIE_MRX_GTX_P11
PEX_RX4 117 PCIE_MRX_C_GTX_P12 0.1U/10V 1 2 C345 PCIE_MRX_GTX_P12
PEX_RX5 111 PCIE_MRX_C_GTX_P13 0.1U/10V 1 2 C347 PCIE_MRX_GTX_P13
PEX_RX6 105 PCIE_MRX_C_GTX_P14 0.1U/10V 1 2 C348 PCIE_MRX_GTX_P14
PEX_RX7 99 PCIE_MRX_C_GTX_P15 0.1U/10V 1 2 C350 PCIE_MRX_GTX_P15
0.1U/10V C349
PEX_RX8 93
PEX_RX9 87
PEX_RX10 81
PEX_RX11 75
PEX_RX12 69
PEX_RX13 63
PEX_RX14 57
PEX_RX15 51
PCIE_MTX_GRX_N[8..15] (10)
PEX_TX0# 148 PCIE_MTX_GRX_N8
PEX_TX1# 142 PCIE_MTX_GRX_N9
PEX_TX2# 136 PCIE_MTX_GRX_N10
PEX_TX3# 120 PCIE_MTX_GRX_N11
PEX_TX4# 114 PCIE_MTX_GRX_N12
PEX_TX5# 108 PCIE_MTX_GRX_N13
PEX_TX6# 102 PCIE_MTX_GRX_N14
PEX_TX7# 96 PCIE_MTX_GRX_N15
PEX_TX8# 90
PEX_TX9# 84
PEX_TX10# 78
PEX_TX11# 72
PEX_TX12# 66
PEX_TX13# 60
PEX_TX14# 54
PEX_TX15# 48
PCIE_MTX_GRX_P[8..15] (10)
PEX_TX0 150 PCIE_MTX_GRX_P8
PEX_TX1 144 PCIE_MTX_GRX_P9
PEX_TX2 138 PCIE_MTX_GRX_P10
PEX_TX3 122 PCIE_MTX_GRX_P11
PEX_TX4 116 PCIE_MTX_GRX_P12
PEX_TX5 110 PCIE_MTX_GRX_P13
PEX_TX6 104 PCIE_MTX_GRX_P14
PEX_TX7 98 PCIE_MTX_GRX_P15
PEX_TX8 92
PEX_TX9 86
PEX_TX10 80
PEX_TX11 74
PEX_TX12 68
PEX_TX13 62
PEX_TX14 56
PEX_TX15 50
ACAV_IN_MXM (19)
+3.3V_RUN
PWR_LEVEL 18
R251 47K
R252 47K
PRSNT_R# 2 MXM2_PRSNT_R#
PRSNT_L# 281 MXM2_PRSNT_L#
+3.3V_RUN
U7
NC7SZ32M5X
MXM2_PRESENT# (10,33)
GND1 11
GND2 37
GND3 47
GND4 53
GND5 59
GND6 65
GND7 71
GND8 77
GND9 83
GND10 89
GND11 95
GND12 101
GND13 107
GND14 113
GND15 119
GND16 125
GND17 133
GND18 139
GND19 145
GND20 151
GND21 157
GND22 173
GND23 179
GND24 185
GND25 191
GND26 197
GND27 203
GND28 209
GND29 215
GND30 221
GND31 251
GND32 257
GND33 263
GND34 269
GND35 275
GND36 36
GND37 46
GND38 52
GND39 58
GND40 64
GND41 70
GND42 76
GND43 82
GND44 88
GND45 94
GND46 100
GND47 106
GND48 112
GND49 118
GND50 124
GND51 134
GND52 140
GND53 146
GND54 152
GND55 166
GND56 174
GND57 180
GND58 186
GND59 192
GND60 198
GND61 204
GND62 210
GND63 216
GND64 222
GND65 228
GND66 244
GND67 250
GND68 256
GND69 262
GND70 268
GND71 E3
GND72 E4
MXM3.0_FOXCONN_AS0B826-S43B-4H
MXM Conn
+PWR_SRC
C353 10U/25V_1206
C354 10U/25V_1206
C356 0.1U/50V CAP0603
C357 0.1U/50V CAP0603
C358 0.1U/50V CAP0603
+3.3V_RUN
C359 4.7U/10V_0805
C360 0.1U/16V
C361 *0.1U/10V_NC
+5V_RUN
C830 10U/10V_0805
C665 1U/10V
C654 0.1U/16V
C858 10U/10V_0805
C666 1U/10V
C657 0.1U/16V
+5V_RUN
Unstuff
+5V_MXM2
JP14
Q36 *SI3456BDV_NC
C369
C324 *470P/50V_NC
C366 *0.1U/10V_NC
*0.1U/10V_NC
Unstuff
Stuff
+3.3V_RUN
JP15
+3.3V_MXM2
JP22
+3.3V_MXM1
Q38 *SI3456BDV_NC
C368
C326 *470P/50V_NC
C367 *0.1U/10V_NC
0.1U/10V
+5V_ALW
+15V_ALW
R249 *100K_NC
R248 *100K_NC
(12,19,20) MXM1_PWR_EN
(11,22) MXM2_PWR_EN
R214 *0_NC
R184 *0_NC
Q40 *2N7002W-7-F_NC
Q39 *2N7002W-7-F_NC
Title
VGA-MXM-CON-2_A
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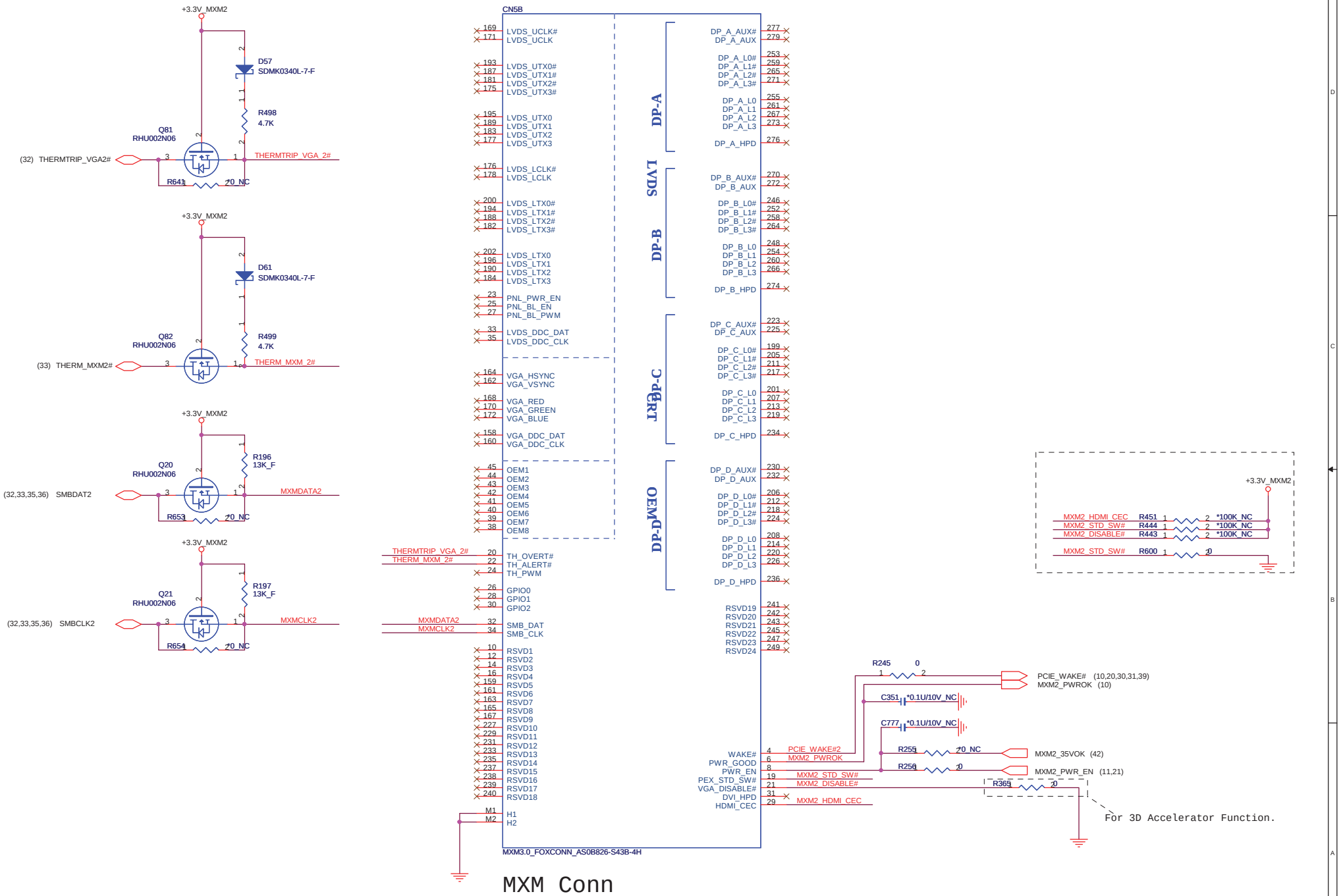

MXM Conn

Title	VGA-MXM-CON-2_B	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
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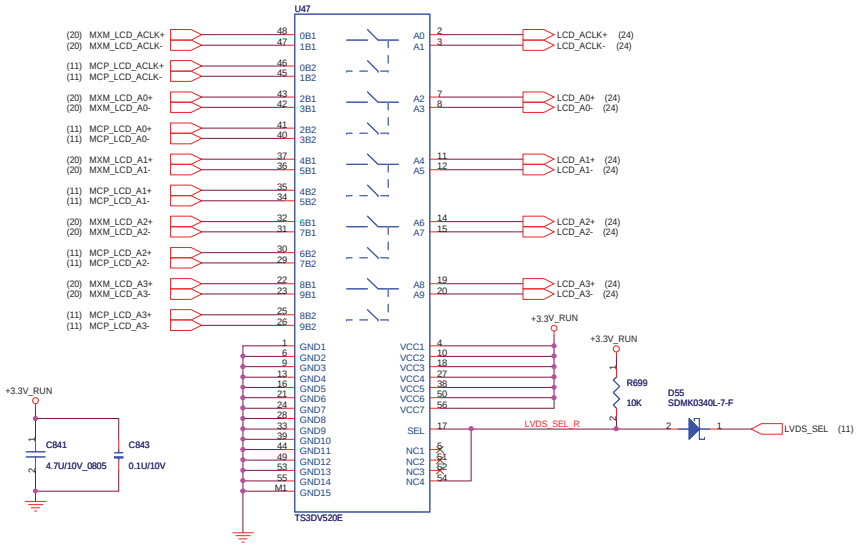
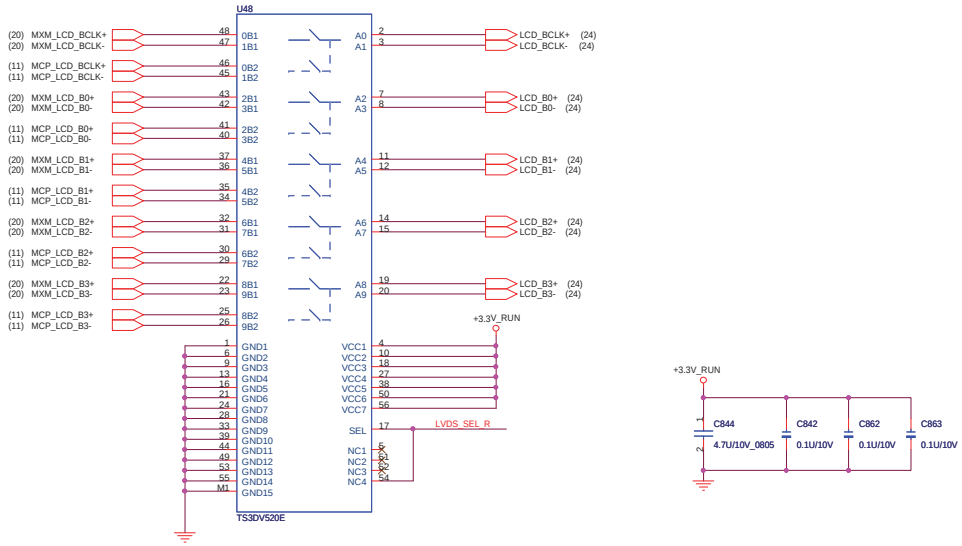
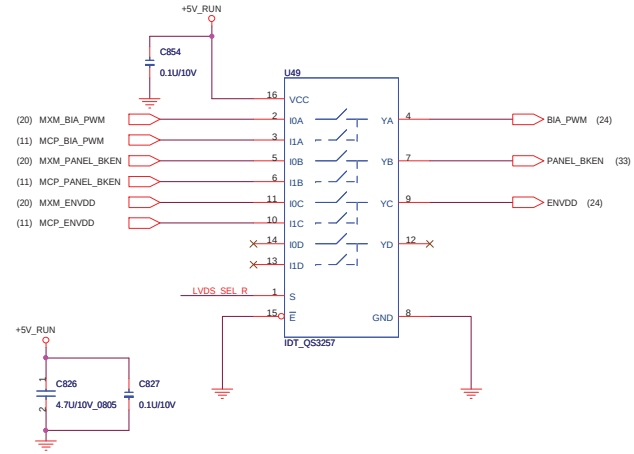
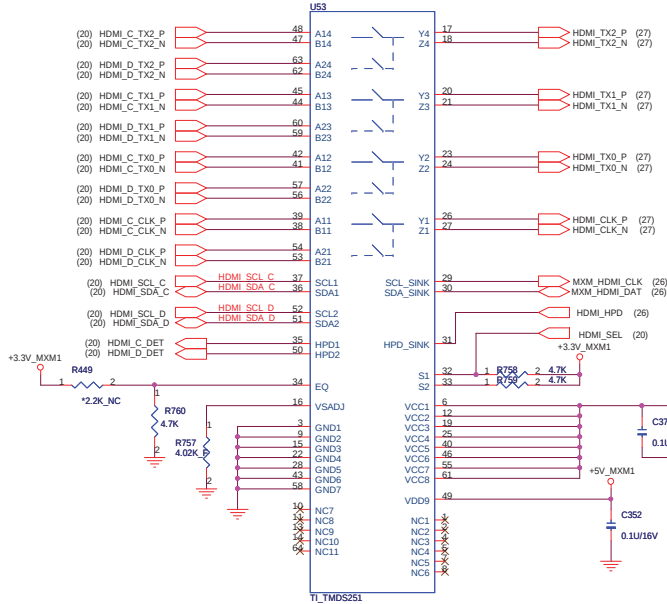




MCP_LVDS_SEL	LVDS SOURCE
L	MXM
H	MCP

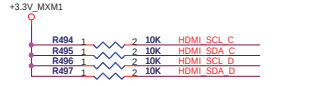


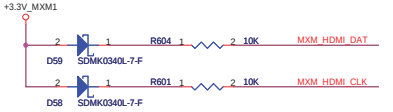
HDMI PORT C&D MUX



Close CN9

CONTROL BITS		I/O SELECTED	HOT PLUG DETECT STATUS	
S2	S1 (OEM)	Y/Z SCL_SINK SDA_SINK	HPD1	HPD2
H	H	A1/B1 SCL1 SDA1	HPD_SINK For NB-9EGT	L
H	L	A2/B2 SCL2 SDA2	L For NB-9EGTX	HPD_SINK





Title: LVDS/ HDMI SELECTION
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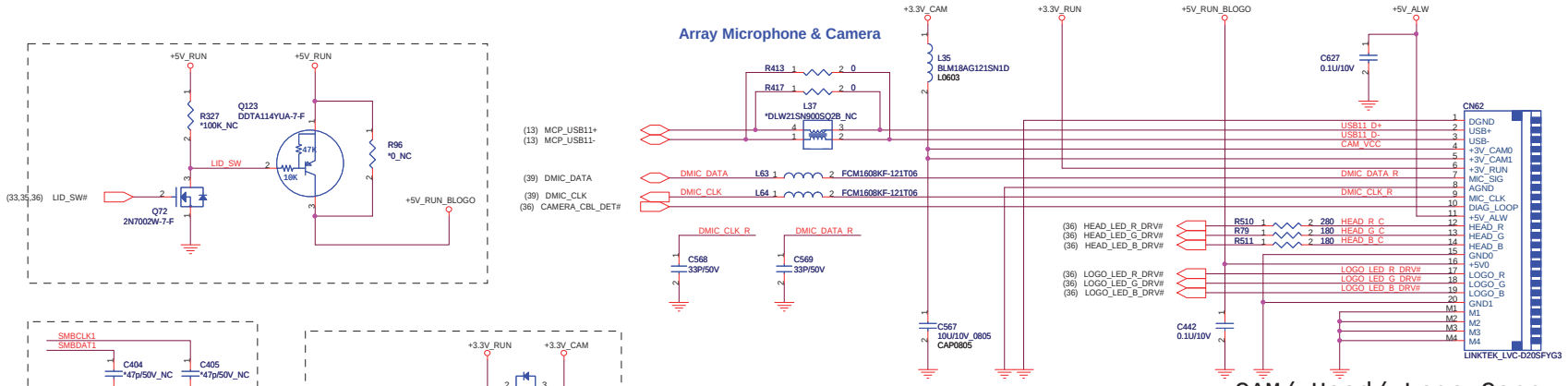
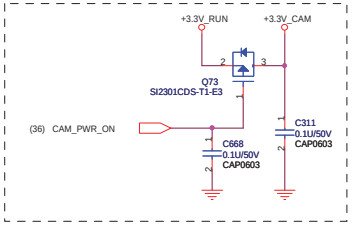
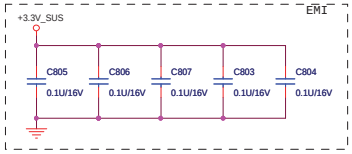
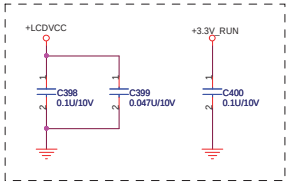
Array Microphone & Camera

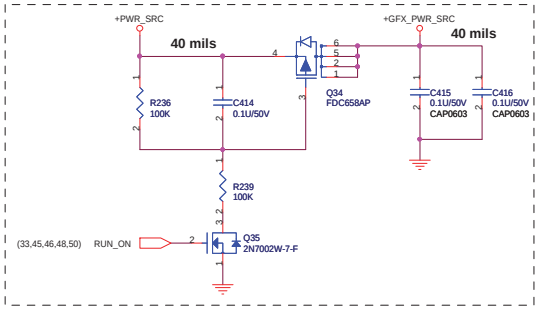


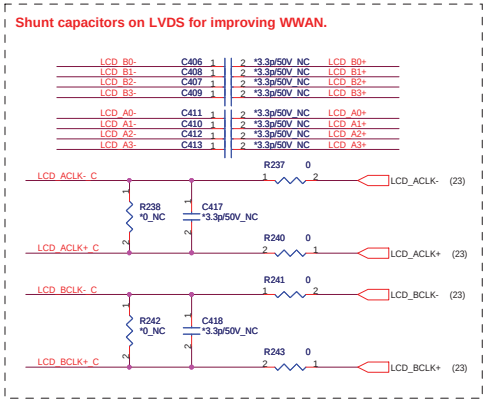
CAM/ Head/ Logo Conn

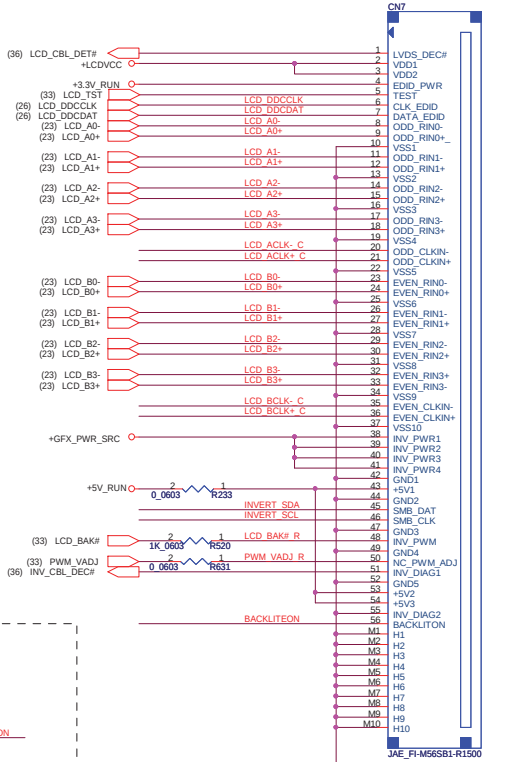


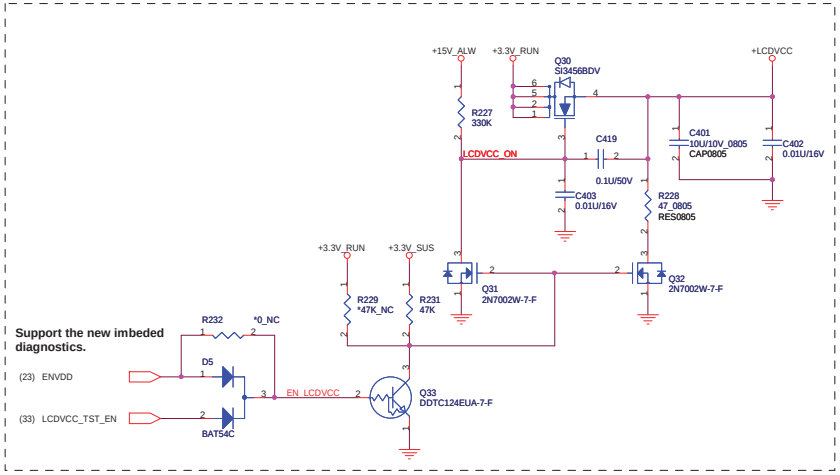


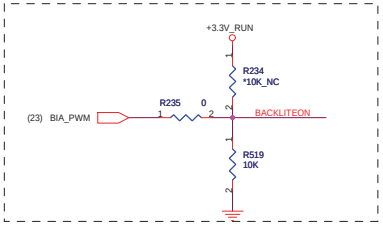


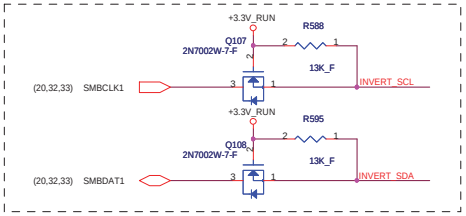








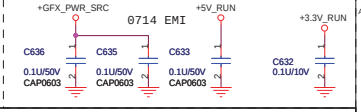




Near by CN7

LVDS/ Invertor Conn

Adress : A9H --Contrast
AAH --Backlight



Title	LCD CONN	
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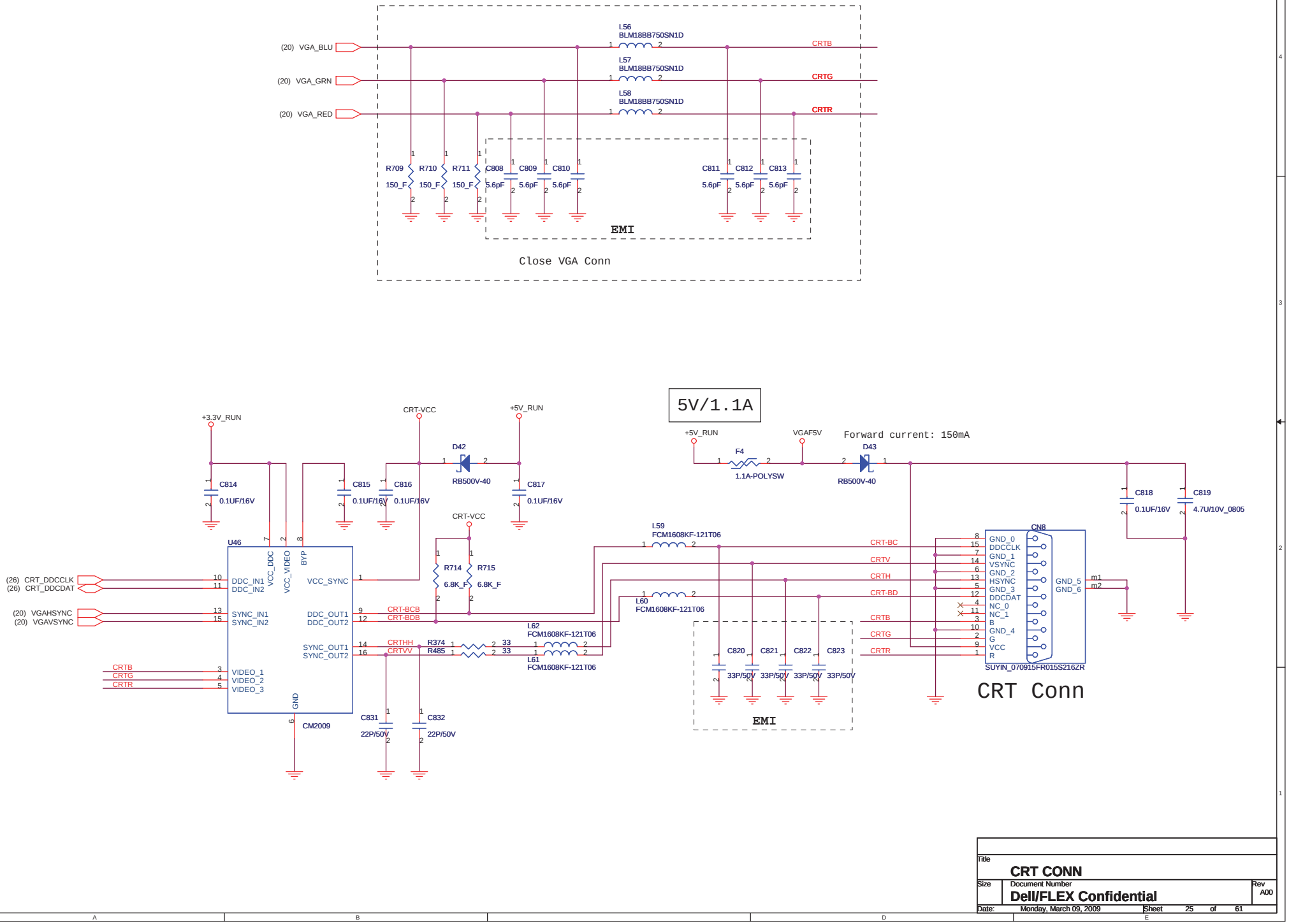

Title	CRT CONN	
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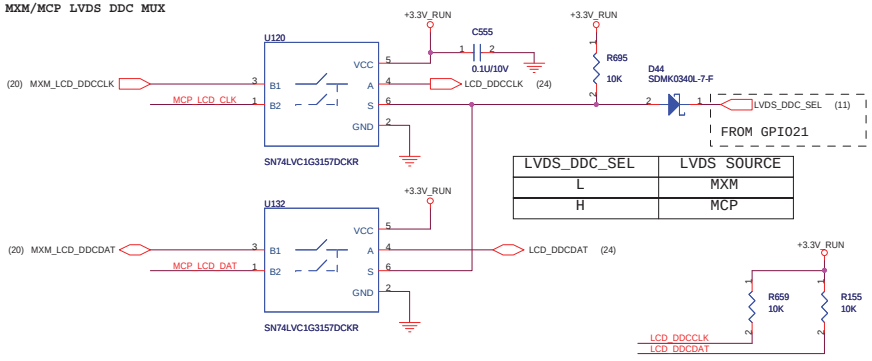
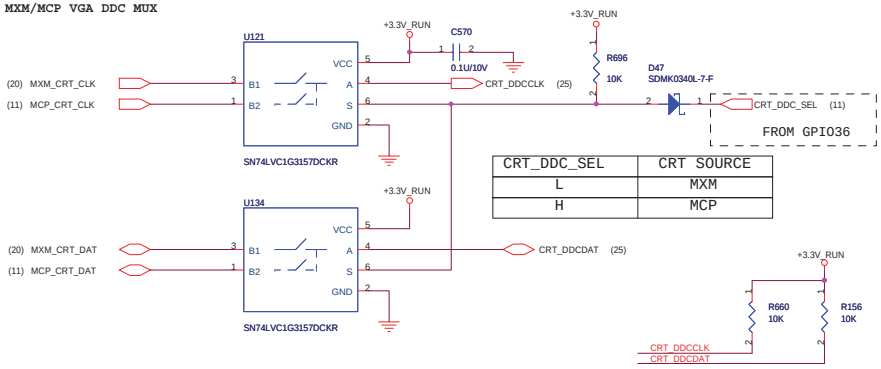
MXM/MCP LVDS DDC MUX



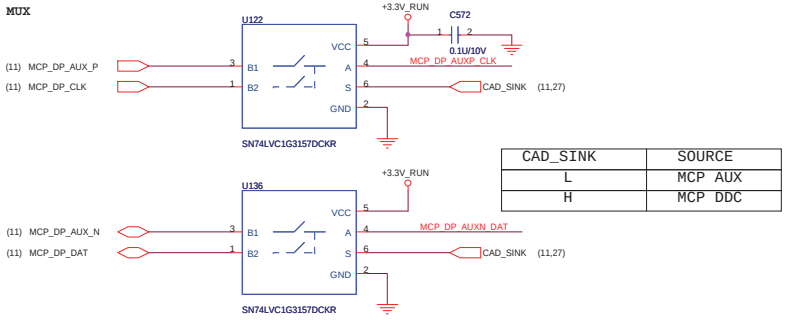
LVDS_DDC_SEL	LVDS SOURCE
L	MXM
H	MCP

MXM/MCP VGA DDC MUX



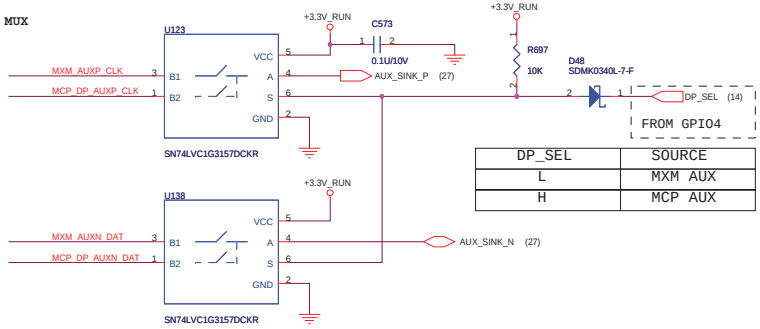
CRT_DDC_SEL	CRT SOURCE
L	MXM
H	MCP

MCP AUX/DDC MUX



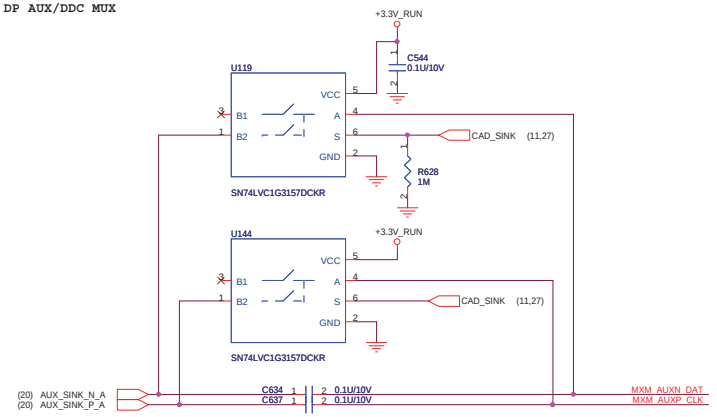
CAD_SINK	SOURCE
L	MCP AUX
H	MCP DDC

MXM/MCP DP AUX MUX



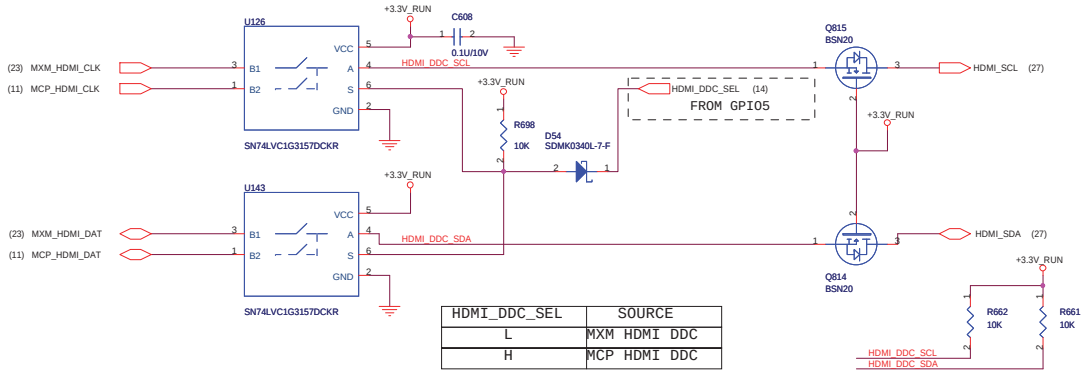
DP_SEL	SOURCE
L	MXM AUX
H	MCP AUX

MXM DP AUX/DDC MUX



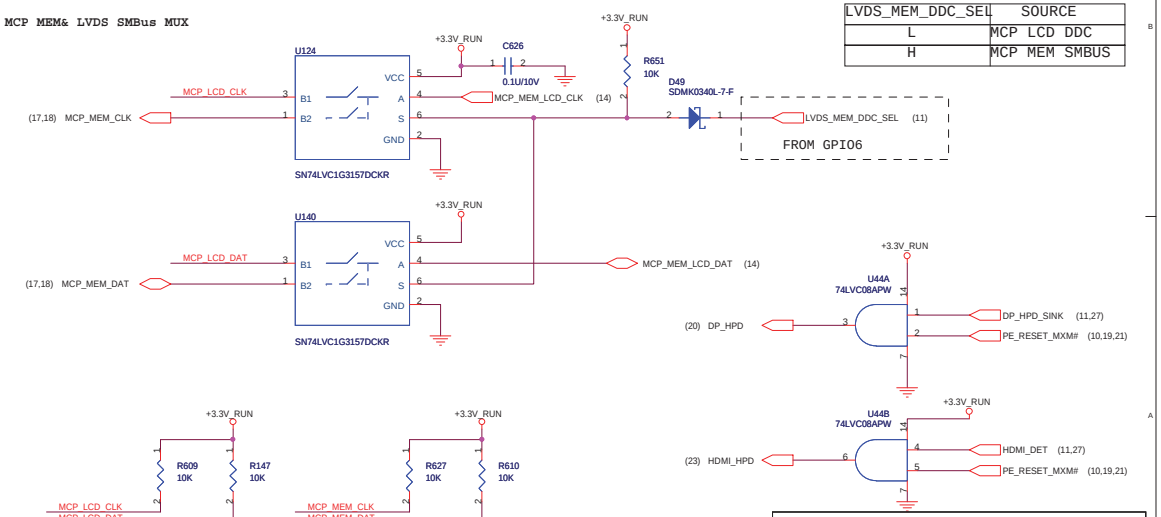
CAD_SINK	SOURCE
L	A=B1(AC couple)
H	A=B2 (DDC)

MXM/MCP HDMI DDC MUX



HDMI_DDC_SEL	SOURCE
L	MXM HDMI DDC
H	MCP HDMI DDC

MCP MEM& LVDS SMBus MUX



LVDS_MEM_DDC_SEL	SOURCE
L	MCP LCD DDC
H	MCP MEM SMBUS

Title	MXM& MCP DDC/ AUX MUX	
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Reserve For EMI

(23) HDMI_CLK_P
(23) HDMI_CLK_N
HDMI_CLK_P
HDMI_CLK_N
L18
*DLW21SN900SQ2B_NC
HDMI_CLK_P_C
HDMI_CLK_N_C
R277 0
R279 0

(23) HDMI_TX0_P
(23) HDMI_TX0_N
HDMI_TX0_P
HDMI_TX0_N
L19
*DLW21SN900SQ2B_NC
HDMI_TX0_P_C
HDMI_TX0_N_C
R278 0
R282 0

(23) HDMI_TX1_P
(23) HDMI_TX1_N
HDMI_TX1_P
HDMI_TX1_N
L20
*DLW21SN900SQ2B_NC
HDMI_TX1_P_C
HDMI_TX1_N_C
R283 0
R285 0

(23) HDMI_TX2_P
(23) HDMI_TX2_N
HDMI_TX2_P
HDMI_TX2_N
L21
*DLW21SN900SQ2B_NC
HDMI_TX2_P_C
HDMI_TX2_N_C
R286 0
R287 0

HDMI CONNECTOR

+5V_RUN
+5V_RUN
D21 RB500V-40
D15 RB500V-40
R280 2.2K
R281 2.2K
T35 PAD
T36 PAD
(26) HDMI_SCL
(26) HDMI_SDA
HDMI_SCL
HDMI_SDA
HDMI_CEC
HDMI_CLK_N_C
HDMI_CLK_P_C
HDMI_TX0_N_C
HDMI_TX0_P_C
HDMI_TX1_N_C
HDMI_TX1_P_C
HDMI_TX2_N_C
HDMI_TX2_P_C
CN9
D2+
D2_Shield
D2-
D1+
D1_Shield
D1-
D0+
D0_Shield
D0-
CK+
CK_Shield
CK-
CE_Remote
NC
DDC_CLK
DDC_DATA
GND
+5V
HP_DET
M1
M2
M3
M4
TYCO_1-1775040-8
VGAF5V
(11,26) HDMI_DET
HDMI_DET
R63 1K
L11 BLM18PG181SN1D
R284 100K
C427 100p/50V
D16 RB500V-40
C432 180p/50V
C839 0.1U/10V

EMI1
YSD-48425A-025

Reserve For EMI

(20) DP_LANE3_N
(20) DP_LANE3_P
DP_LANE3_N
DP_LANE3_P
L22
*DLW21SN900SQ2B_NC
DP_LANE3_N_R
DP_LANE3_P_R
R288 0
R289 0

(20) DP_LANE2_N
(20) DP_LANE2_P
DP_LANE2_N
DP_LANE2_P
L23
*DLW21SN900SQ2B_NC
DP_LANE2_N_R
DP_LANE2_P_R
R291 0
R290 0

(20) DP_LANE1_N
(20) DP_LANE1_P
DP_LANE1_N
DP_LANE1_P
L24
*DLW21SN900SQ2B_NC
DP_LANE1_N_R
DP_LANE1_P_R
R292 0
R293 0

(20) DP_LANE0_N
(20) DP_LANE0_P
DP_LANE0_N
DP_LANE0_P
L25
*DLW21SN900SQ2B_NC
DP_LANE0_N_R
DP_LANE0_P_R
R294 0
R295 0

(26) AUX_SINK_N
(26) AUX_SINK_P
AUX_SINK_N
AUX_SINK_P
L26
*DLW21SN900SQ2B_NC
AUX_SINK_N_R
AUX_SINK_P_R
R296 0
R297 0

DISPLAY PORT CONNECTOR

+3.3V_DP_PWR1
R191 100K
AUX_SINK_N_R
AUX_SINK_P_R
R200 100K
(11,26) DP_HPD_SINK
R65 1K
L12 BLM18PG181SN1D
D33 RB500V-40
R513 100K
C611 *100p/50V_NC
C612 220P/50V
+3.3V_RUN
+3.3V_DP_PWR1
R549 0_0603
F5 1.1A-POLYSW
D17 *RB500V-40_NC
C840 0.1U/10V
+3.3V_DP_PWR
CN10
HPD
AUXN
AUXP
LANE3N
LANE3P
LANE2N
LANE2P
LANE1N
LANE1P
LANE0N
LANE0P
PWR
PWR_RET
GND1
GND2
MODE
GND3
GND4
GND5
GND6
H1
H2
H3
H4
M1
M2
M3
M4
MOLEX_47272-0001
CAD_SINK (11,26)

Title	HDMI & DP CONN	
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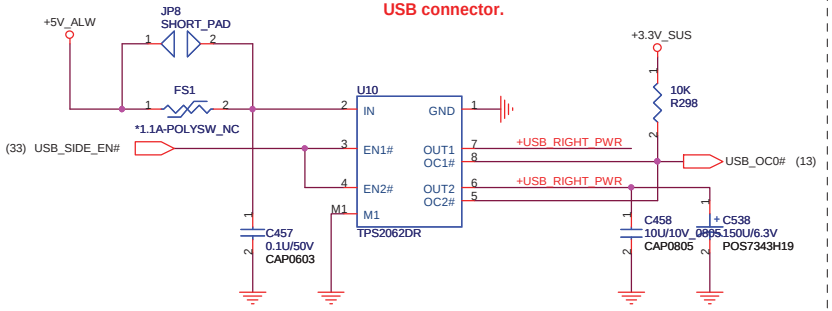
USB POWER SW

Place one 150uF cap by each USB connector.

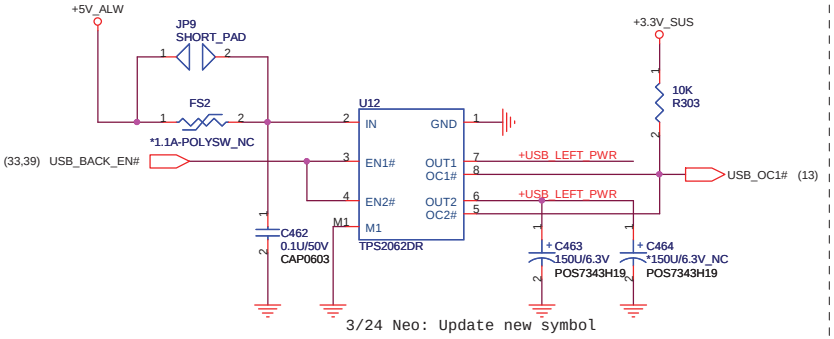
Each channel is 1A



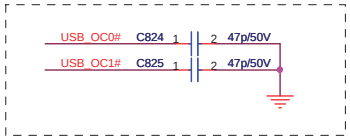
USB POWER SW

Place one 150uF cap by each USB connector.

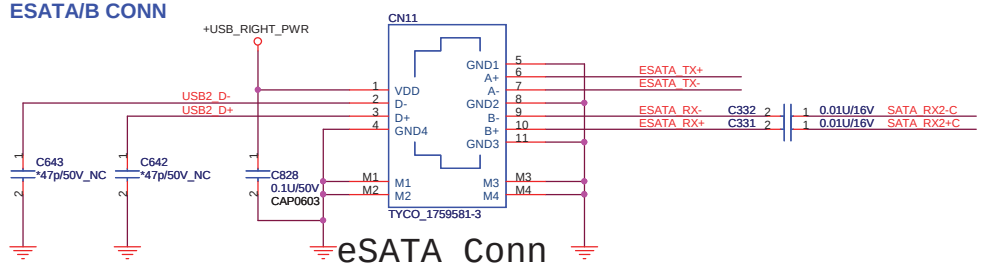
Each channel is 1A



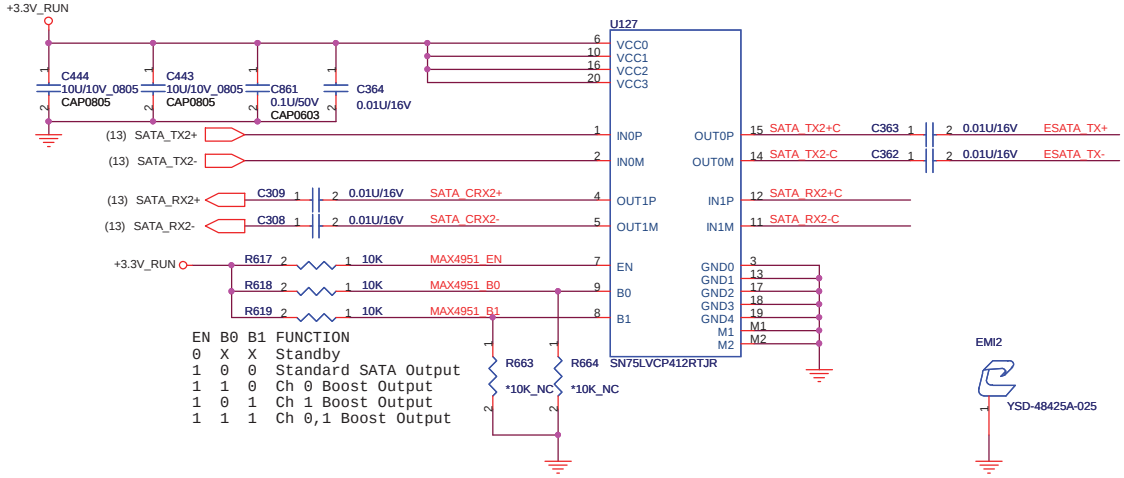
3/24 Neo: Update new symbol



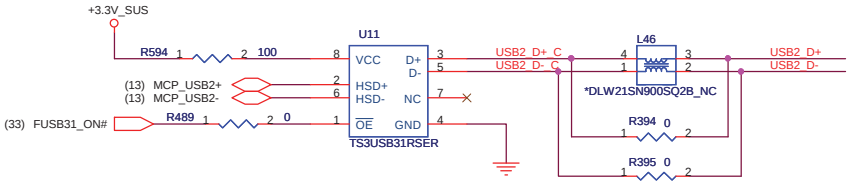
ESATA/B CONN

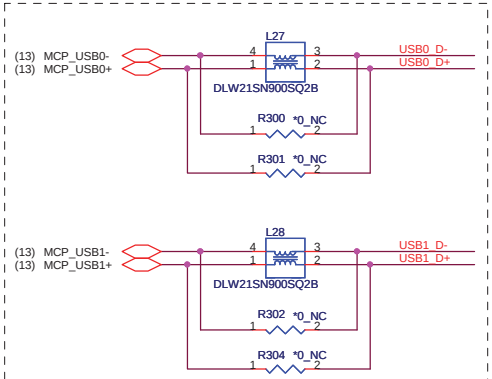


eSATA Conn



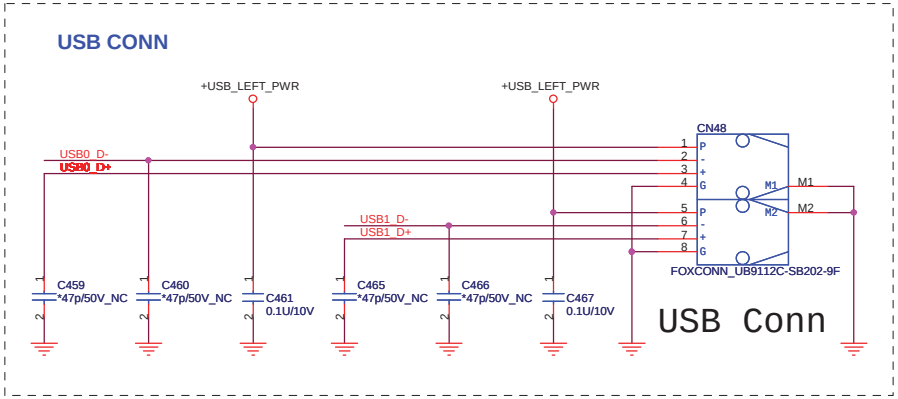
EN B0 B1 FUNCTION
0 X X Standby
1 0 0 Standard SATA Output
1 1 0 Ch 0 Boost Output
1 0 1 Ch 1 Boost Output
1 1 1 Ch 0,1 Boost Output





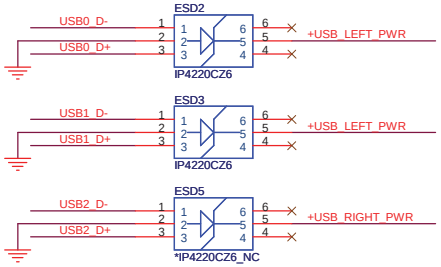
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

USB CONN



USB Conn

Place ESD diodes as close as USB connector.



Title	USBx2 & eSATA	
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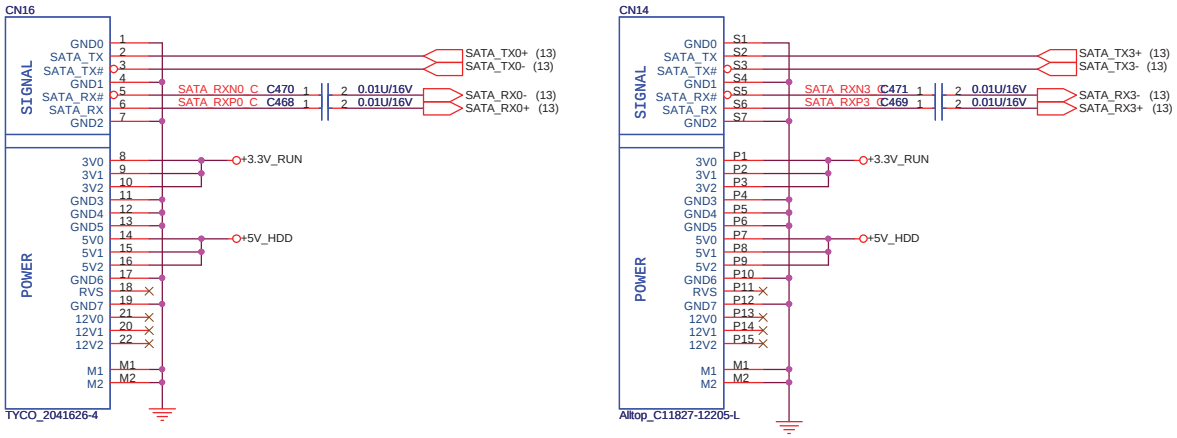
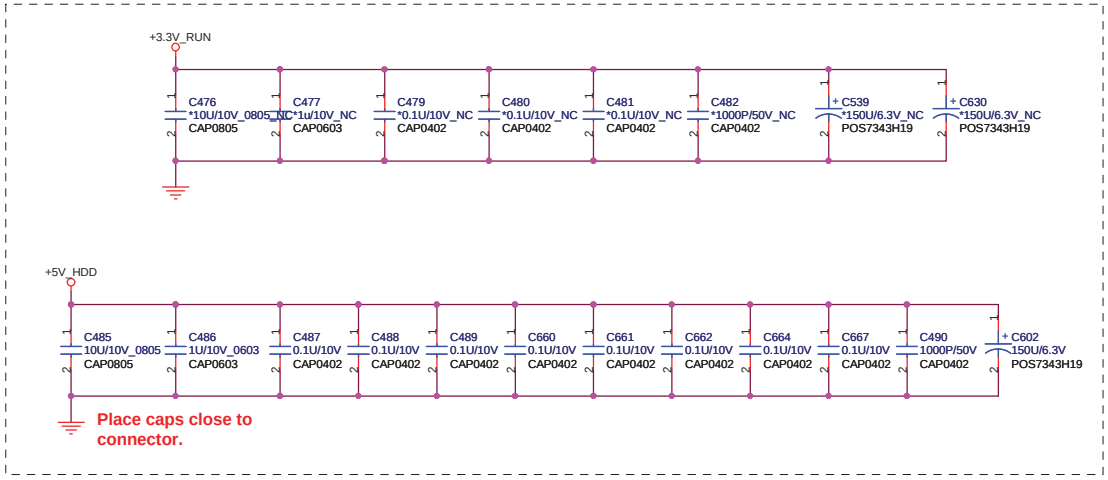
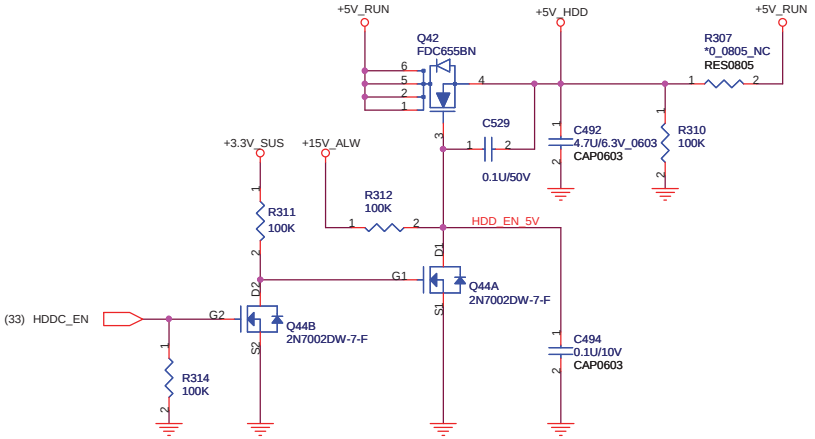
SATA Connector



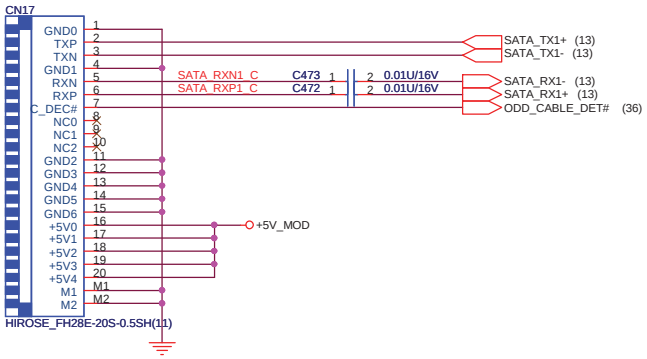
Master HDD Conn

Slave HDD Conn

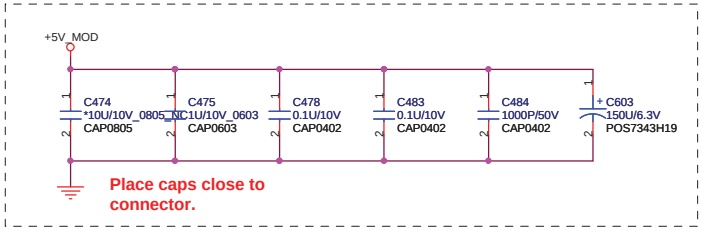


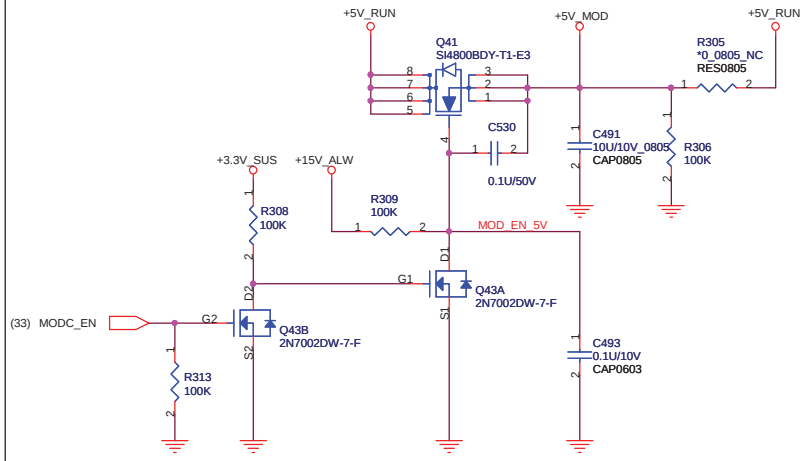


ODD Connector



ODD Conn





Title	HDDx2 & CD ROM	
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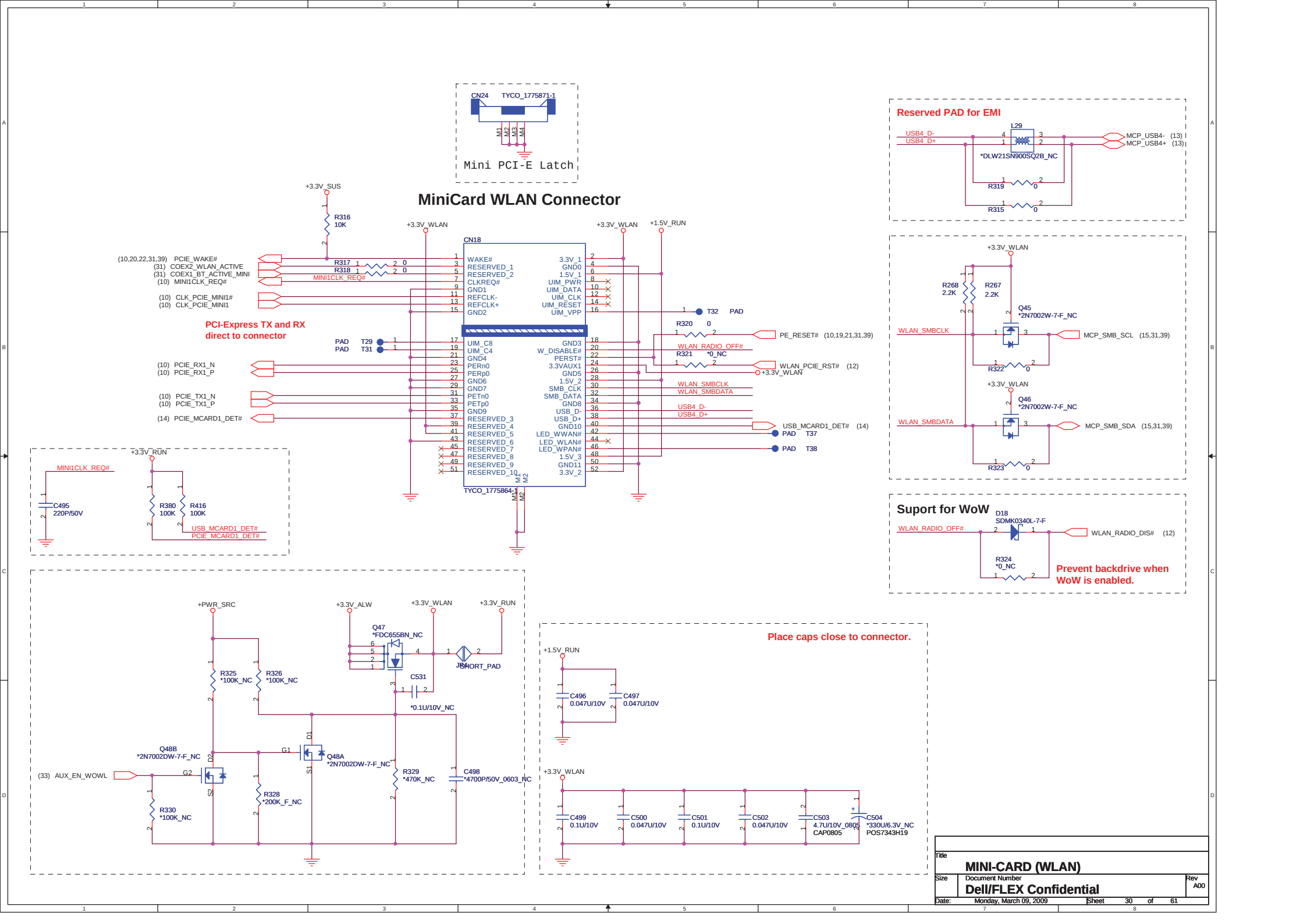
CN24 TYCO_1775871-1
M1 M2 M3 M4
Mini PCI-E Latch
MiniCard WLAN Connector
+3.3V_SUS
R316 10K
+3.3V_WLAN
CN18
(10,20,22,31,39) PCIE_WAKE#
(31) COEX2_WLAN_ACTIVE
(31) COEX1_BT_ACTIVE_MINI
(10) MINI1CLK_REQ#
R317 0
R318 0
MINI1CLK_REQ#
(10) CLK_PCIE_MINI1#
(10) CLK_PCIE_MINI1
WAKE#
RESERVED_1
RESERVED_2
CLKREQ#
GND1
REFCLK-
REFCLK+
GND2
3.3V_1
GND0
1.5V_1
UIM_PWR
UIM_DATA
UIM_CLK
UIM_RESET
UIM_VPP
PCI-Express TX and RX direct to connector
PAD T29
PAD T31
UIM_C8
UIM_C4
GND4
PERn0
PERp0
GND6
GND7
PETn0
PETp0
GND9
RESERVED_3
RESERVED_4
RESERVED_5
RESERVED_6
RESERVED_7
RESERVED_8
RESERVED_9
RESERVED_10
GND3
W_DISABLE#
PERST#
3.3VAUX1
GND5
1.5V_2
SMB_CLK
SMB_DATA
GND8
USB_D-
USB_D+
GND10
LED_WWAN#
LED_WLAN#
LED_WPAN#
1.5V_3
GND11
3.3V_2
TYCO_1775864-
(10) PCIE_RX1_N
(10) PCIE_RX1_P
(10) PCIE_TX1_N
(10) PCIE_TX1_P
(14) PCIE_MCARD1_DET#
+1.5V_RUN
T32 PAD
R320 0
PE_RESET# (10,19,21,31,39)
WLAN_RADIO_OFF#
R321 *0_NC
WLAN_PCIE_RST# (12)
+3.3V_WLAN
WLAN_SMBCLK
WLAN_SMBDATA
USB4_D-
USB4_D+
USB_MCARD1_DET# (14)
PAD T37
PAD T38
+3.3V_RUN
MINI1CLK_REQ#
C495 220P/50V
R380 100K
R416 100K
USB_MCARD1_DET#
PCIE_MCARD1_DET#
Reserved PAD for EMI
USB4_D-
USB4_D+
L29
*DLW21SN900SQ2B_NC
MCP_USB4- (13)
MCP_USB4+ (13)
R319 0
R315 0
R268 2.2K
R267 2.2K
Q45 *2N7002W-7-F_NC
WLAN_SMBCLK
MCP_SMB_SCL (15,31,39)
R322 0
Q46 *2N7002W-7-F_NC
WLAN_SMBDATA
MCP_SMB_SDA (15,31,39)
R323 0
Suport for WoW
D18 SDMK0340L-7-F
WLAN_RADIO_OFF#
WLAN_RADIO_DIS# (12)
R324 *0_NC
Prevent backdrive when WoW is enabled.
+PWR_SRC
+3.3V_ALW
+3.3V_WLAN
+3.3V_RUN
Q47 *FDC655BN_NC
JP4 SHORT_PAD
C531 *0.1U/10V_NC
R325 *100K_NC
R326 *100K_NC
Q48B *2N7002DW-7-F_NC
Q48A *2N7002DW-7-F_NC
(33) AUX_EN_WOWL
R328 *200K_F_NC
R329 *470K_NC
C498 *4700P/50V_0603_NC
R330 *100K_NC
Place caps close to connector.
+1.5V_RUN
C496 0.047U/10V
C497 0.047U/10V
C499 0.1U/10V
C500 0.047U/10V
C501 0.1U/10V
C502 0.047U/10V
C503 4.7U/10V_0805 CAP0805
C504 *330U/6.3V_NC POS7343H19
Title
MINI-CARD (WLAN)
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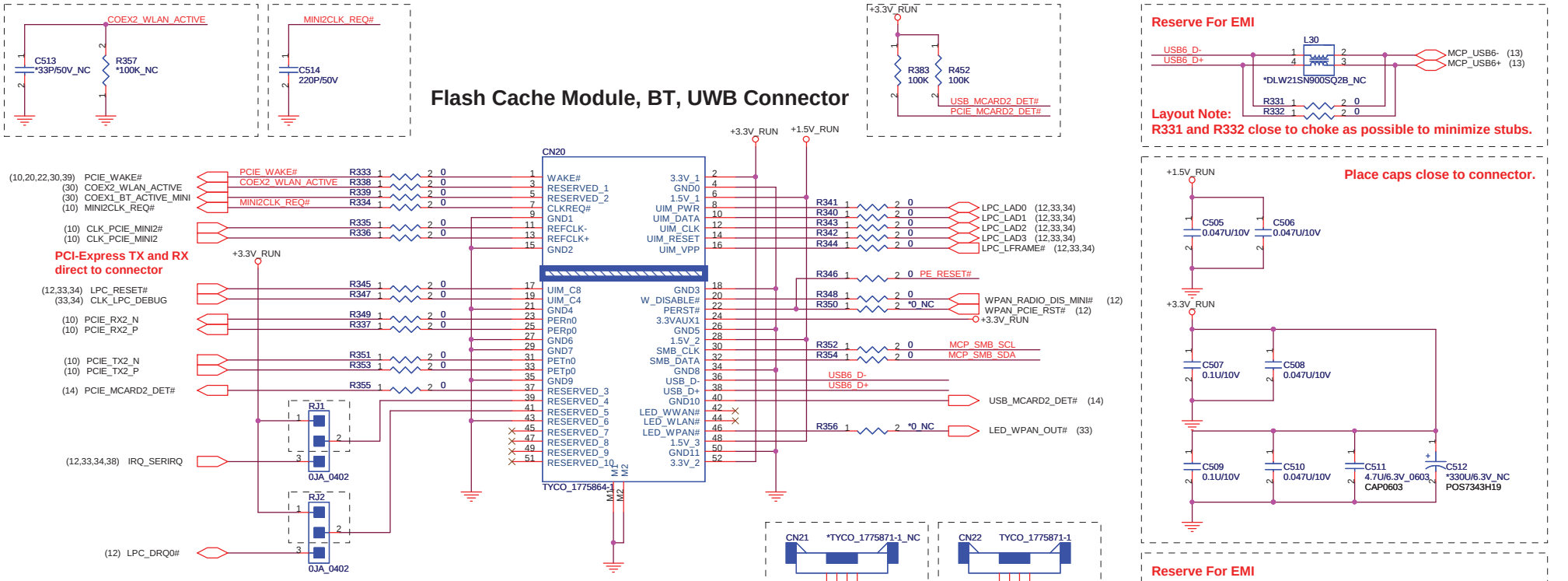
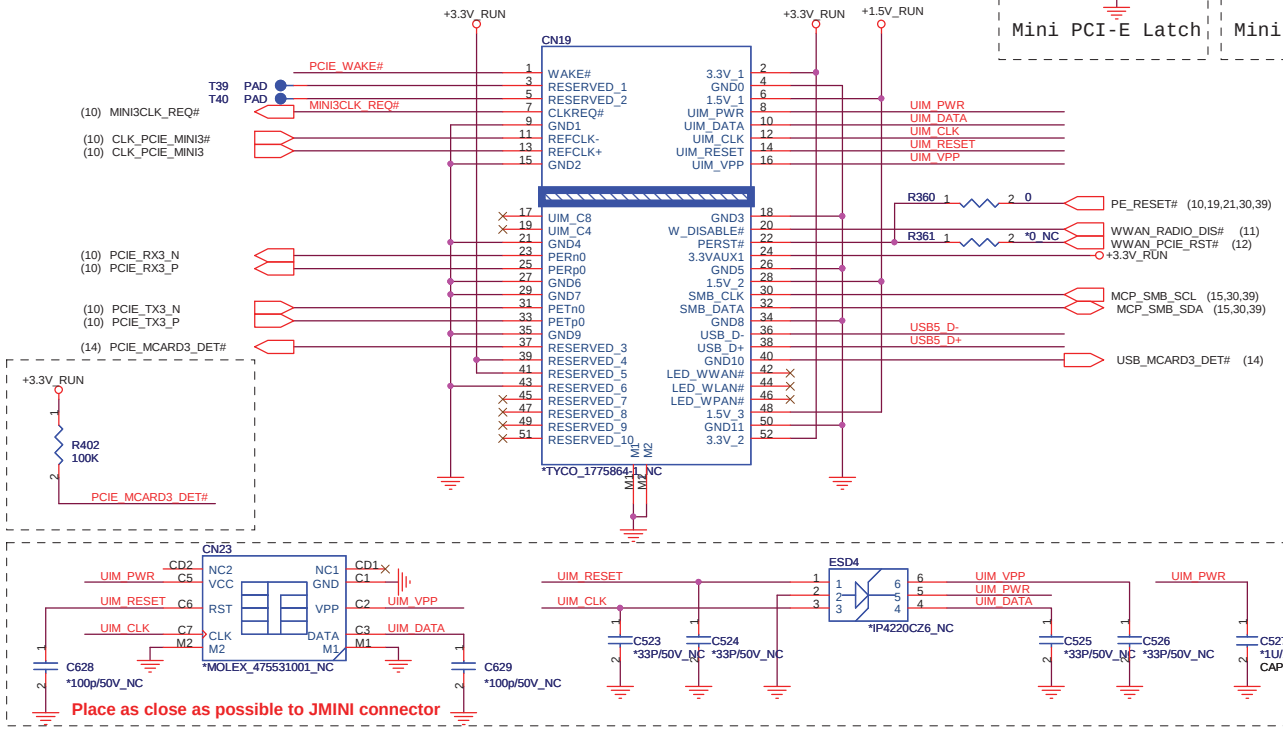
Flash Cache Module, BT, UWB Connector



MiniCard WWAN Connector

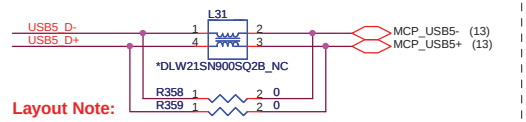


Reserve For EMI

Layout Note:
R331 and R332 close to choke as possible to minimize stubs.

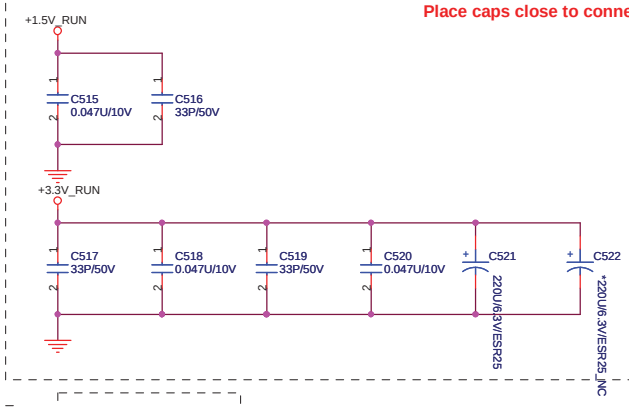
Place caps close to connector.

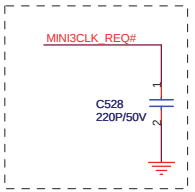
Reserve For EMI



Layout Note:
R358 and R359 close to choke as possible to minimize stubs.

Place caps close to connector.





Title	MINI-CARD (WPAN,WWAN)	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
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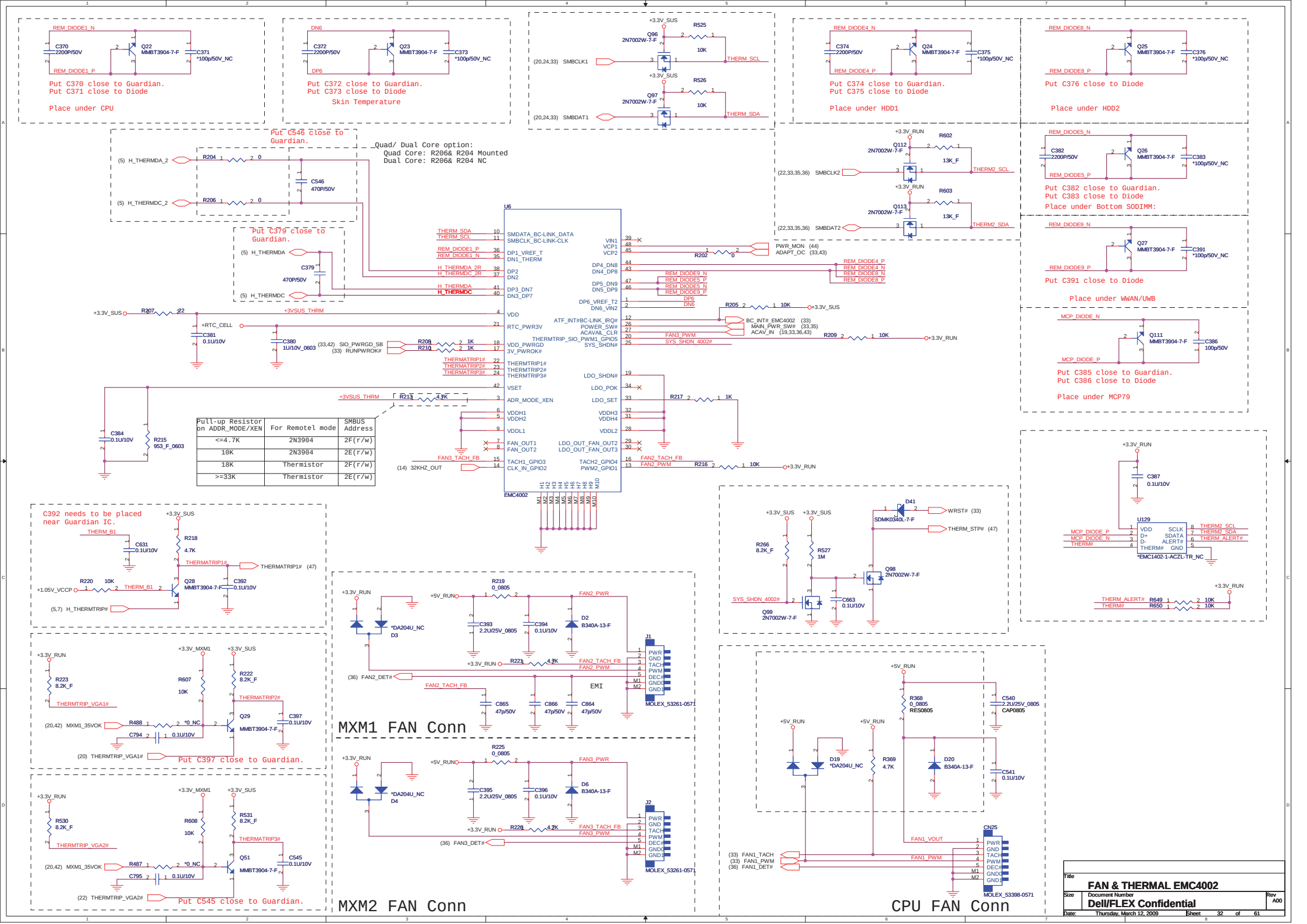
REM_DIODE1_N
C370 2200P/50V
Q22 MMBT3904-7-F
C371 *100p/50V_NC
REM_DIODE1_P
Put C370 close to Guardian.
Put C371 close to Diode
Place under CPU
DN6
C372 2200P/50V
Q23 MMBT3904-7-F
C373 *100p/50V_NC
DP6
Put C372 close to Guardian.
Put C373 close to Diode
Skin Temperature
+3.3V_SUS
Q96 2N7002W-7-F
R525 10K
(20,24,33) SMBCLK1
THERM_SCL
Q97 2N7002W-7-F
R526 10K
(20,24,33) SMBDAT1
THERM_SDA
REM_DIODE4_N
C374 2200P/50V
Q24 MMBT3904-7-F
C375 *100p/50V_NC
REM_DIODE4_P
Put C374 close to Guardian.
Put C375 close to Diode
Place under HDD1
REM_DIODE8_N
Q25 MMBT3904-7-F
C376 *100p/50V_NC
REM_DIODE8_P
Put C376 close to Diode
Place under HDD2
Put C546 close to Guardian.
Quad/ Dual Core option:
Quad Core: R206& R204 Mounted
Dual Core: R206& R204 NC
(5) H_THERMDA_2
R204
C546 470P/50V
(5) H_THERMDC_2
R206
Put C379 close to Guardian.
(5) H_THERMDA
C379 470P/50V
(5) H_THERMDC
U6
THERM_SDA
THERM_SCL
SMDATA_BC-LINK_DATA
SMBCLK_BC-LINK-CLK
REM_DIODE1_P
REM_DIODE1_N
DP1_VREF_T
DN1_THERM
H_THERMDA_2R
H_THERMDC_2R
DP2
DN2
H_THERMDA
H_THERMDC
DP3_DN7
DN3_DP7
VIN1
VCP1
VCP2
PWR_MON (44)
ADAPT_OC (33,43)
R202 0
DP4_DN8
DN4_DP8
REM_DIODE4_P
REM_DIODE4_N
REM_DIODE8_N
REM_DIODE8_P
REM_DIODE9_N
REM_DIODE5_P
DP5_DN9
DN5_DP9
REM_DIODE5_N
REM_DIODE9_P
DP6_VREF_T2
DN6_VIN2
DP6
DN6
R205 10K
+3.3V_SUS
VDD
+3VSUS_THRM
ATF_INT#
RTC_PWR3V
BC_LINK_IRQ#
POWER_SW#
ACAVAIL_CLR
THERMTRIP_SIO_PWM1_GPIO5
SYS_SHDN#
BC_INT# EMC4002 (33)
MAIN_PWR_SW# (33,35)
ACAV_IN (19,33,36,43)
FAN3_PWM
SYS_SHDN_4002#
R209 10K
+3.3V_RUN
+3.3V_SUS
R207 22
+RTC_CELL
C381 0.1U/10V
C380 1U/10V_0603
(33,42) SIO_PWRGD_SB
(33) RUNPWROK#
R208 1K
R210 1K
VDD_PWRGD
3V_PWROK#
THERMTRIP1#
THERMTRIP2#
THERMTRIP3#
THERMATRIP1#
THERMATRIP2#
THERMATRIP3#
LDO_SHDN#
LDO_POK
LDO_SET
R217 1K
VSET
ADR_MODE_XEN
+3VSUS_THRM
R213 4.7K
VDDH1
VDDH2
VDDL1
VDDH3
VDDH4
VDDL2
FAN_OUT1
FAN_OUT2
LDO_OUT_FAN_OUT2
LDO_OUT_FAN_OUT3
FAN3_TACH_FB
CLK_IN_GPIO2
TACH1_GPIO3
TACH2_GPIO4
PWM2_GPIO1
FAN2_TACH_FB
FAN2_PWM
R216 10K
(14) 32KHZ_OUT
EMC4002
H1 H2 H3 H4 H5 H6 H7 H8 H9 M10
M1 M2 M3 M4 M5 M6 M7 M8 M9 M10
C384 0.1U/10V
R215 953_F_0603
Pull-up Resistor on ADDR_MODE/XEN
For Remotel mode
SMBUS Address
<=4.7K
2N3904
2F(r/w)
10K
2N3904
2E(r/w)
18K
Thermistor
2F(r/w)
>=33K
Thermistor
2E(r/w)
REM_DIODE9_N
Q27 MMBT3904-7-F
C391 *100p/50V_NC
REM_DIODE9_P
Put C391 close to Diode
Place under WWAN/UWB
MCP_DIODE_N
Q111 MMBT3904-7-F
C386 100p/50V
MCP_DIODE_P
Put C385 close to Guardian.
Put C386 close to Diode
Place under MCP79
C392 needs to be placed near Guardian IC.
THERM_B1
C631 0.1U/10V
R218 4.7K
THERMATRIP1#
THERMATRIP1# (47)
R220 10K
+1.05V_VCCP
Q28 MMBT3904-7-F
C392 0.1U/10V
(5,7) H_THERMTRIP#
+3.3V_RUN
+3.3V_MXM1
+3.3V_SUS
R223 8.2K_F
R607 10K
R222 8.2K_F
THERMTRIP_VGA1#
THERMATRIP2#
(20,42) MXM1_35VOK
R488 *0_NC
Q29 MMBT3904-7-F
C397 0.1U/10V
C794 0.1U/10V
(20) THERMTRIP_VGA1#
Put C397 close to Guardian.
R530 8.2K_F
R608 10K
R531 8.2K_F
THERMTRIP_VGA2#
THERMATRIP3#
R487 *0_NC
Q51 MMBT3904-7-F
C545 0.1U/10V
C795 0.1U/10V
(22) THERMTRIP_VGA2#
Put C545 close to Guardian.
+5V_RUN
R219 0_0805
C393 2.2U/25V_0805
C394 0.1U/10V
D2 B340A-13-F
FAN2_PWR
*DA204U_NC D3
R221 4.7K
FAN2_TACH_FB
FAN2_PWM
(36) FAN2_DET#
EMI
C865 47p/50V
C866 47p/50V
C864 47p/50V
J1
PWR
GND
TACH
PWM
DEC#
GND
GND
M1
M2
MOLEX_53261-0571
MXM1 FAN Conn
R225 0_0805
C395 2.2U/25V_0805
C396 0.1U/10V
D6 B340A-13-F
FAN3_PWR
*DA204U_NC D4
R226 4.7K
FAN3_TACH_FB
FAN3_PWM
(36) FAN3_DET#
J2
MOLEX_53261-0571
MXM2 FAN Conn
+3.3V_RUN
R602 13K_F
Q112 2N7002W-7-F
(22,33,35,36) SMBCLK2
THERM2_SCL
R603 13K_F
Q113 2N7002W-7-F
(22,33,35,36) SMBDAT2
THERM2_SDA
REM_DIODE5_N
C382 2200P/50V
Q26 MMBT3904-7-F
C383 *100p/50V_NC
REM_DIODE5_P
Put C382 close to Guardian.
Put C383 close to Diode
Place under Bottom SODIMM:
+3.3V_SUS
D41 SDMK0340L-7-F
WRST# (33)
THERM_STP# (47)
R266 8.2K_F
R527 1M
Q98 2N7002W-7-F
SYS_SHDN_4002#
C663 0.1U/10V
Q99 2N7002W-7-F
C387 0.1U/10V
U129
MCP_DIODE_P
MCP_DIODE_N
THERM#
VDD
D+
D-
THERM#
SCLK
SDATA
ALERT#
GND
THERM2_SCL
THERM2_SDA
THERM_ALERT#
*EMC1402-1-ACZL-TR_NC
THERM_ALERT#
R649 10K
R650 10K
+5V_RUN
R368 0_0805 RES0805
C540 2.2U/25V_0805 CAP0805
D19 *DA204U_NC
R369 4.7K
D20 B340A-13-F
C541 0.1U/10V
(33) FAN1_TACH
(33) FAN1_PWM
(36) FAN1_DET#
FAN1_VOUT
FAN1_PWM
CN25
MOLEX_53398-0571
CPU FAN Conn
Title
FAN & THERMAL EMC4002
Size
Document Number
Dell/FLEX Confidential
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Date: Thursday, March 12, 2009
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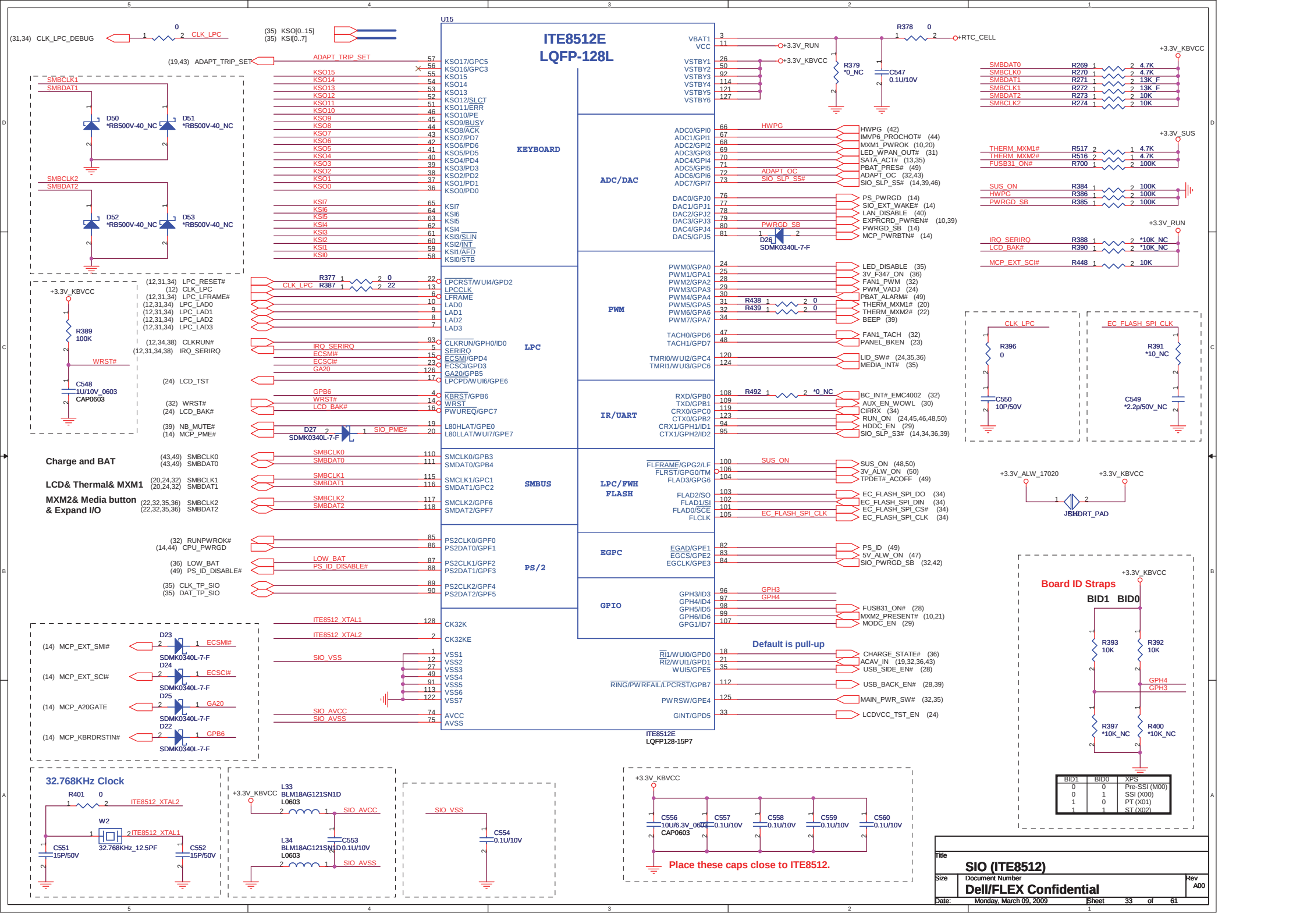
U15
ITE8512E
LQFP-128L
KEYBOARD
ADC/DAC
PWM
LPC
IR/UART
SMBUS
LPC/FWH FLASH
EGPC
PS/2
GPIO
ITE8512E
LQFP128-15P7
Charge and BAT
LCD& Thermal& MXM1
MXM2& Media button & Expand I/O
Default is pull-up
Board ID Straps
BID1 BID0
Place these caps close to ITE8512.
32.768KHz Clock
Title
SIO (ITE8512)
Size
Document Number
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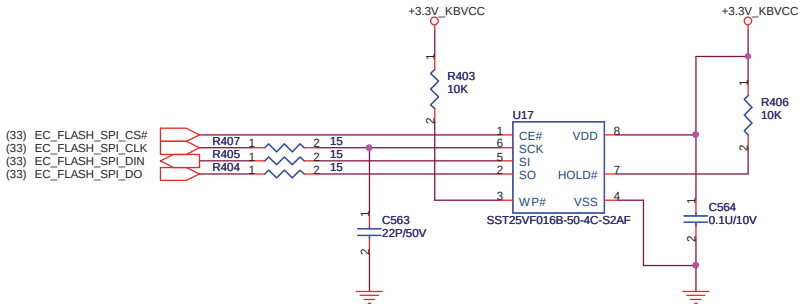
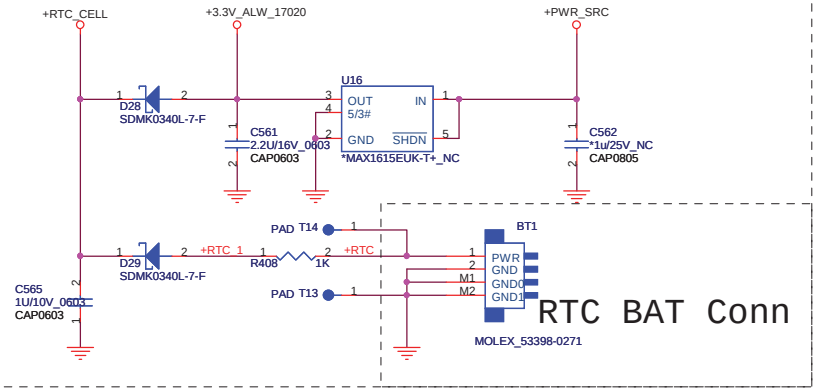
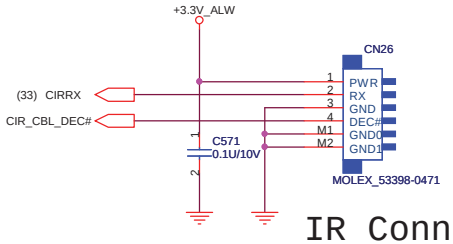
16Mbit (2M Byte), SPI

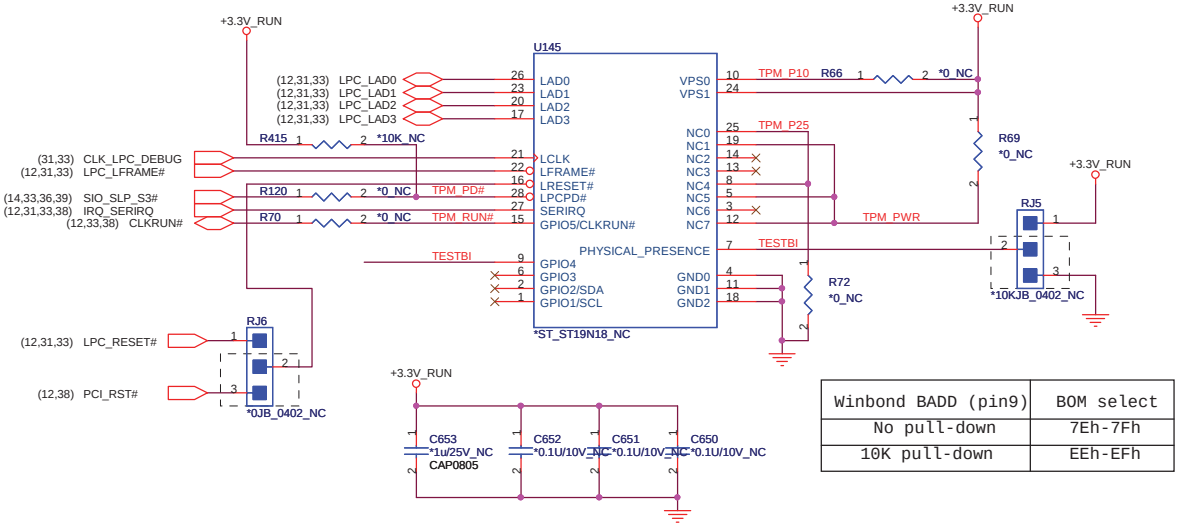


RTC BATTERY



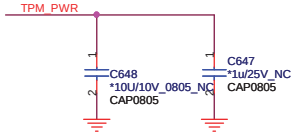
to Consumer IR





Winbond BADD (pin9)	BOM select
No pull-down	7Eh-7Fh
10K pull-down	EEh-EFh

TPM Vendor	BOM select
ST	Mounted: R66 NA: R69, R70, R72, C647, C648
Winbond	NA: R66 Mounted: R69, R70, R72, C647, C648



Title	FLASH/ RTC/ CIR	
Size	Document Number Dell/FLEX Confidential	Rev A00
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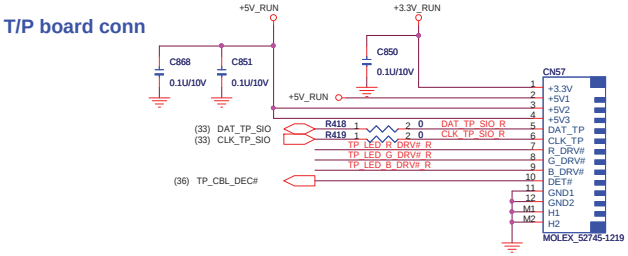
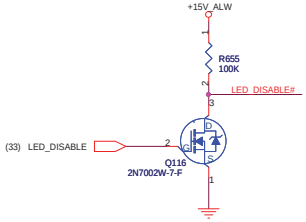
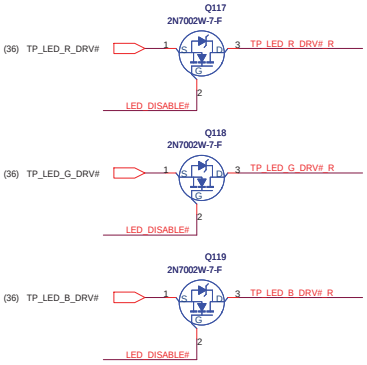
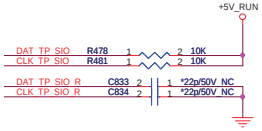
T/P board conn

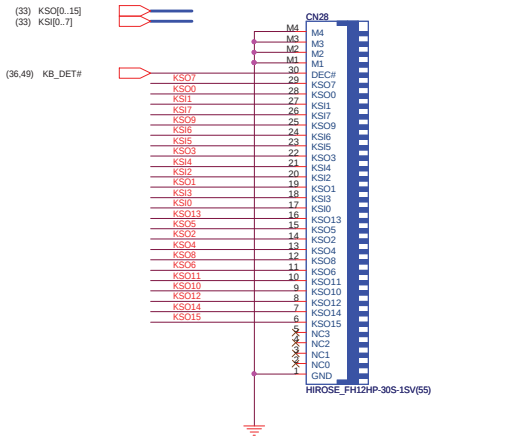




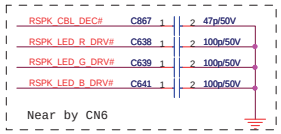


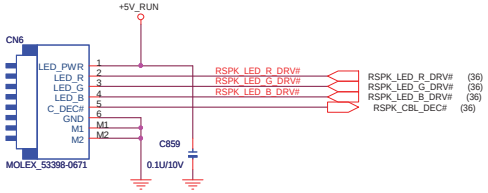


KEYBOARD CONNECTOR

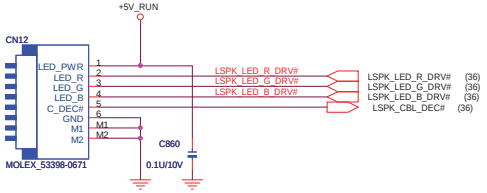


100P CAPS CLOSE TO JKB1



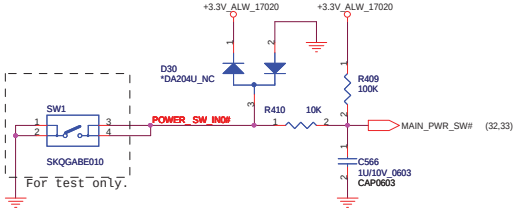


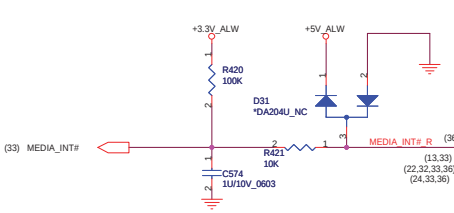
Right SPK LED Conn

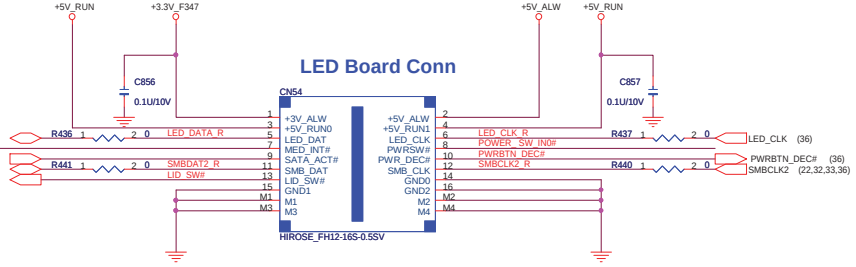


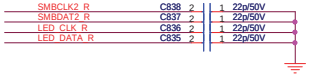
Left SPK LED Conn

Power Buttom

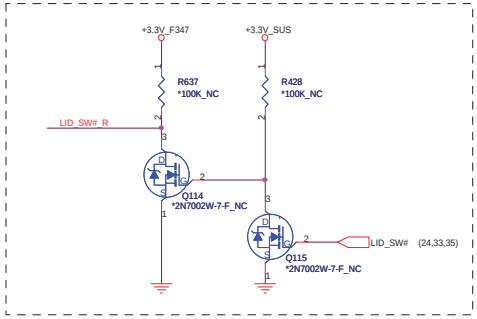


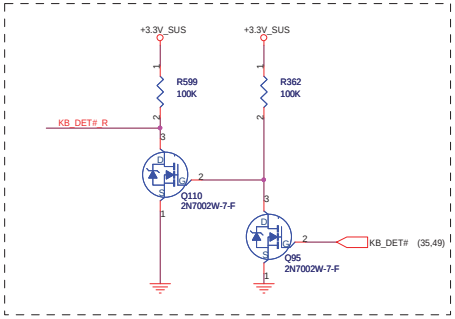


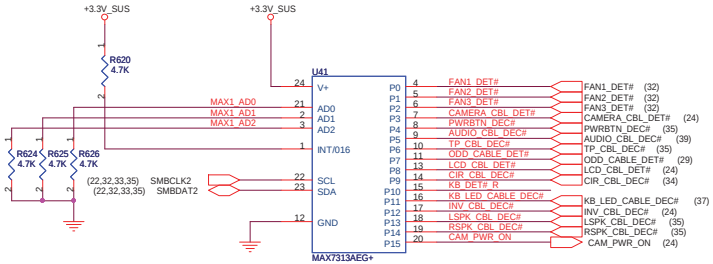


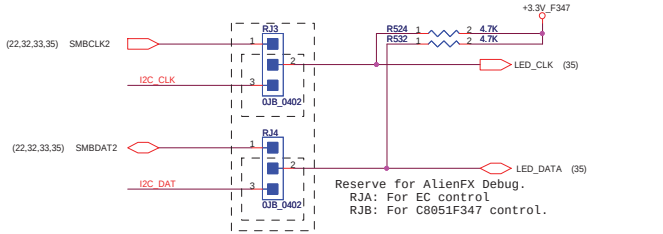


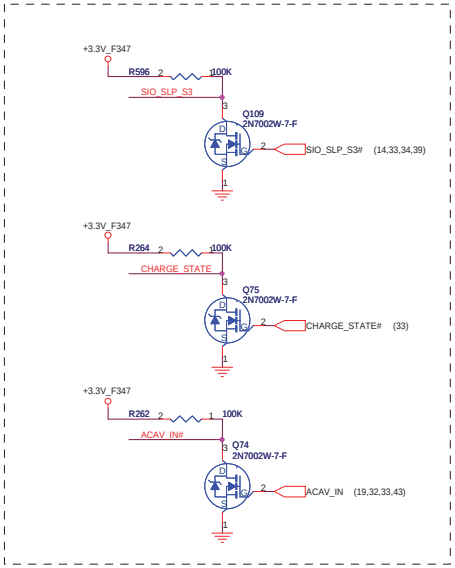
Title	KB/ DAUGHTER BOARD CONN	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Monday, March 09, 2009	Sheet 35 of 61	

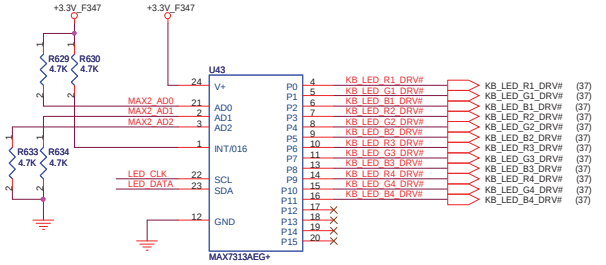


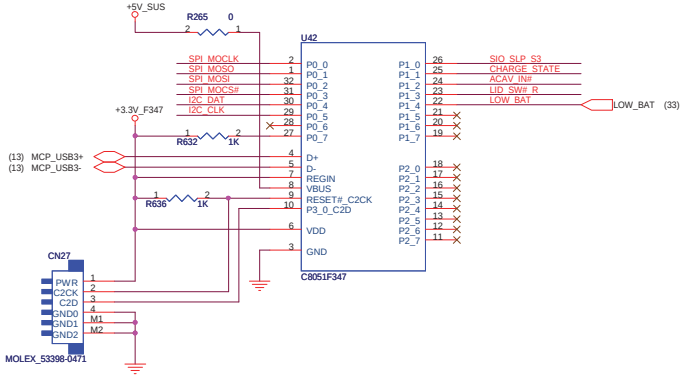


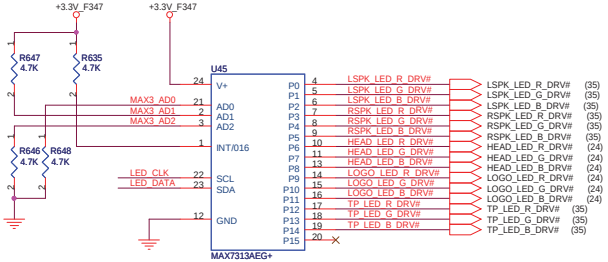










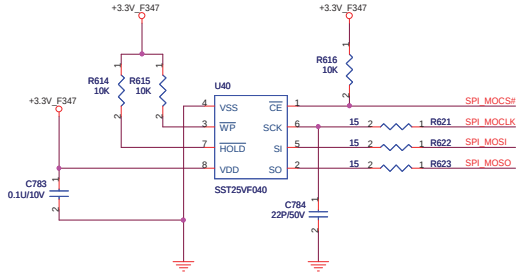


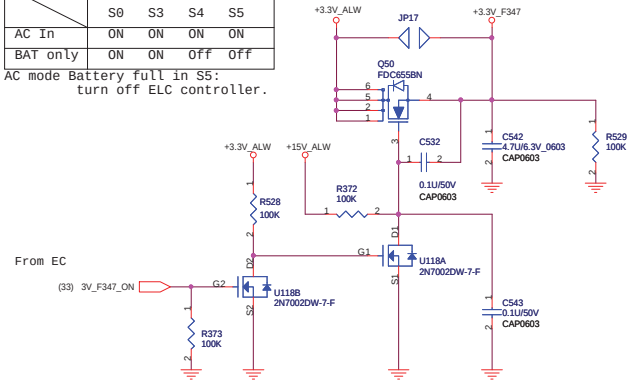
+3.3V_F347 behavior

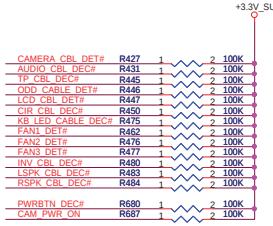
	State			
	S0	S3	S4	S5
AC In	ON	ON	ON	ON
BAT only	ON	ON	Off	Off

AC mode Battery full in S5:
turn off ELC controller.

Reference	AD2	AD1	AD0	MAX7313 #
U41	0	0	0	Cable Detect#
U43	0	0	1	KB LED
U45	0	1	0	SPK& Head& Logo& T/P LED
---	0	1	1	LED Board
---	1	0	0	Media Board
---	1	0	1	Media Board

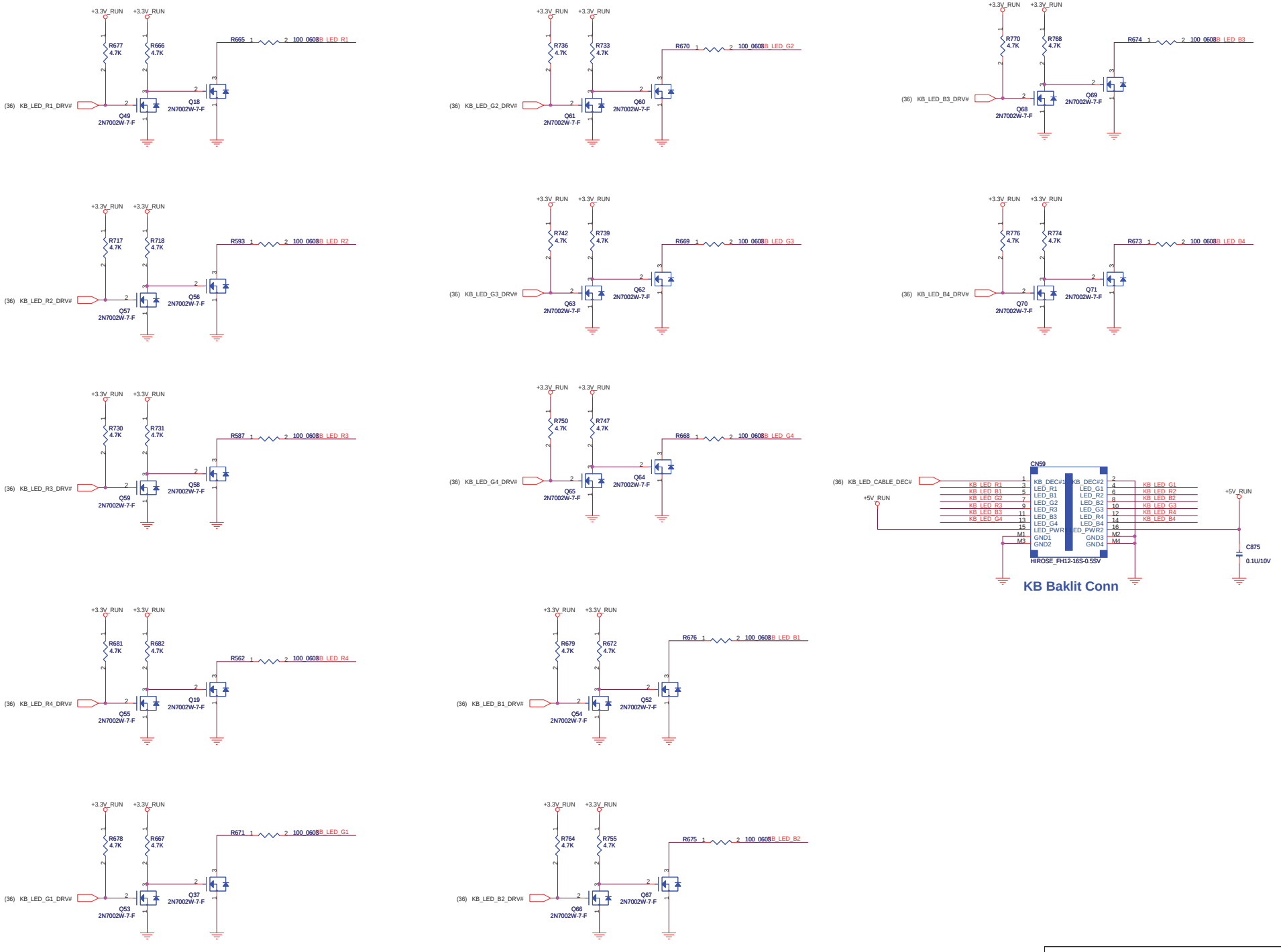




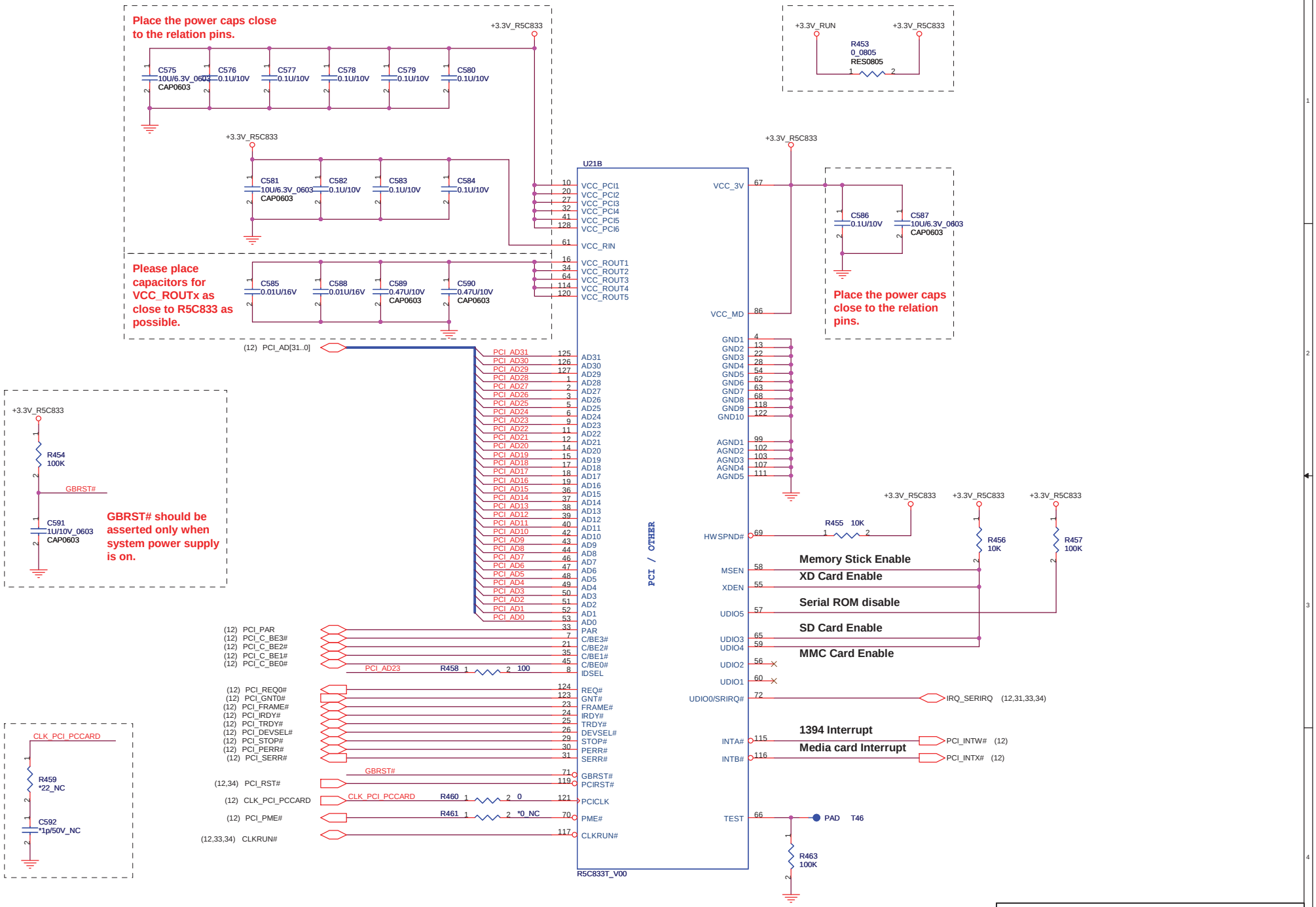


DEVICE	SMBUS ADDRESS
MAXIM - LED	0100 000b
MAXIM - GPIO	0100 001b
I2C EEPROM (U40)	1010 000b

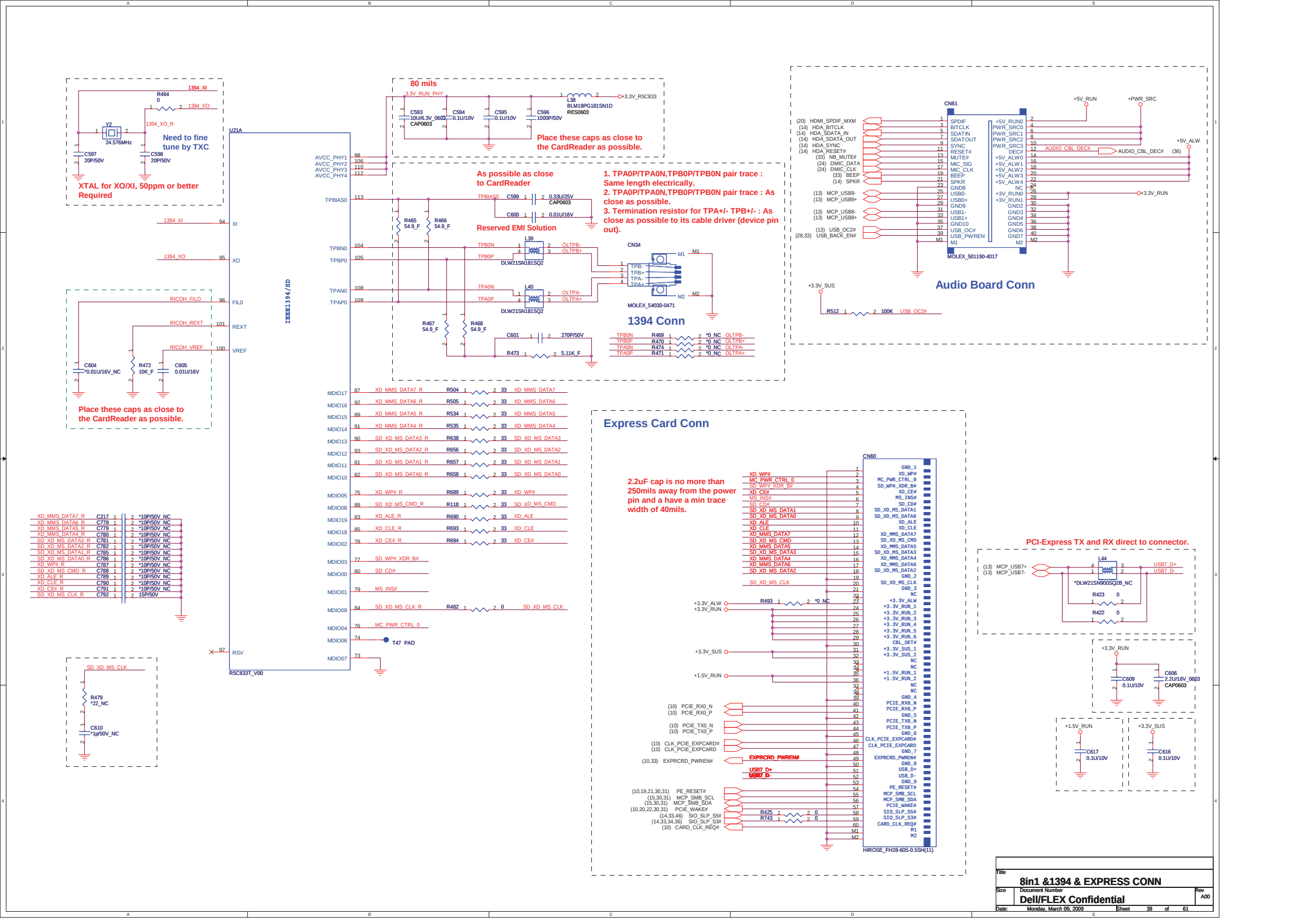
Title	LIGHT FX-1		
Size	Document Number		Rev A00
	Dell/FLEX Confidential		
Date: Monday, March 09, 2009	Sheet 36	of 61	



Title	LIGHT FX-2/ LID	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Monday, March 09, 2009	Sheet 37 of 61	



Title	CardReader (5C833)	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Thursday, March 12, 2009	Sheet 38 of 61	



Title	8in1 &1394 & EXPRESS CONN	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Monday, March 09, 2009	Sheet 39 of 61	

Layout Note:
1.Use 50 ohm impedance for all trace.
2. Trace length matched to a tolerance of 9.8mm in order to keep the skew between signals less than 0.07ns.
3.The receive and transmit signals kept away from each other and other analog and clock signals to reduce crosstalk.

+3.3V_RMGT +3.3V_PHY
JP11
SHORT_PAD
C685 10U/10V_0805 CAP0805

+3.3V_PHY
R540 1.5K_F
RGMII_MDIO

Reserved EMI
RGMII_RXCLK
C695 22P/50V

PHY_XTALI
R542 *22_NC
C696 *1p/50V_NC

PHY_XTALI
C894 47p/50V

+3.3V_PHY
R551 *4.7K_NC
PHY_RESET#
C704 *1p/50V_NC

(11) RGMII_TXCLK
(11) RGMII_TXCTL
(11,14) RGMII_TXD0
(11) RGMII_TXD1
(11) RGMII_TXD2
(11) RGMII_TXD3

(11) RGMII_RXCLK
(11) RGMII_RXCTL
RGMII_RXCLK R538 22 RGMII_RXCLK_C
RGMII_RXCTL R539 22 RGMII_RXCTL_C

(11) RGMII_RXD0
(11) RGMII_RXD1
(11) RGMII_RXD2
(11) RGMII_RXD3
R683 22
R684 22
R685 22
R686 22

Layout Note:
Locate these resistor close to PHY

(11) RGMII_MDC
(11) RGMII_MDIO
RGMII_MDIO

(11) RGMII_25MHz
R541 *0_NC PHY_XTALI

T48 PAD PHY_XTALO
T49 PAD
T50 PAD
T52 PAD
T51 PAD
T53 PAD

R544 0
+3.3V_PHY R545 10K
(11) RGMII_PWRDWN
(33) LAN_DISABLE
R546 0
R547 *0_NC
(11) RGMII_RESET#
R548 0 PHY_RESET#

U33
B5071A2KFBG
PHY
100 BALL BGA

A7	GTXCLK
A8	TX_EN
A9	TX_ER
C7	TXD[0]
C8	TXD[1]
B6	TXD[2]
B7	TXD[3]
B8	TXD[4]
B9	TXD[5]
B10	TXD[6]
A10	TXD[7]
C6	TXC
A2	RXC
B2	RX_DV
A1	RX_ER
D5	COL
E5	CRS
D4	RXD[0]
D3	RXD[1]
C3	RXD[2]
C4	RXD[3]
C5	RXD[4]
B5	RXD[5]
B4	RXD[6]
B3	RXD[7]
E3	MDC
E4	MDIO
F1	XTALI
F2	XTALO
B1	CLK_125
D6	TDI
D8	TMS
D7	TCK
F10	TDO
E10	TRST
D2	MODE_SEL[1]
H5	MODE_SEL[0]
F5	LOWPWR
H8	TEST0
H9	TEST1
E4	RESET
A3	NC_1
A4	NC_2
E6	NC_3
E7	NC_4
E8	NC_5
E9	NC_6
F6	NC_7
F7	NC_8
F8	NC_9
F9	NC_10
G2	NC_11
G4	NC_12

B5071A2KFBG

TRD[0]+	K1	TRD0+ (41)
TRD[0]-	K2	TRD0- (41)
TRD[1]+	K4	TRD1+ (41)
TRD[1]-	K3	TRD1- (41)
TRD[2]+	K5	TRD2+ (41)
TRD[2]-	K6	TRD2- (41)
TRD[3]+	K8	TRD3+ (41)
TRD[3]-	K7	TRD3- (41)
LED[1]	G7	SPD10LED# (41)
LED[2]	G6	SPD100LED# (41)
LED[3]	H6	PHY_ACTLED (41)
LED[4]	G10	PHY_LED[4]
REGOUT[1]	F3	+1.2V_PHY
DVDD_1	C10	
DVDD_2	D1	
DVDD_3	D10	
AVDDL_1	J3	PHY_AVDDL
AVDDL_2	J4	
VREF	C1	
PLLVDD	E1	PHY_PLLVDD
REGOUT[2]	H3	+2.5V_PHY
AVDD_2	J8	
AVDD_1	J2	
BIASVDD	J1	BIASVDD
XTALVDD	G1	XTALVDD
RDAC	H1	R543 1.24K_F
OVDD1	A5	
OVDD2	A6	
REGSUPPLY[1]	G3	+3.3V_PHY
REGSUPPLY[2]	H2	3.3V
GND_1	C2	
GND_2	C9	
GND_3	D9	
AGND_1	J5	
AGND_2	J6	
AGND_3	J7	
PLLGND	E2	
NC_13	G5	
NC_14	G8	
NC_15	G9	
NC_16	H4	
NC_17	H7	
NC_18	H10	R550 *10K_NC +3.3V_PHY
NC_19	J10	
NC_20	J9	
NC_21	K10	
NC_22	K9	

Pace 0.1u close PHY
+3.3V_PHY
C697 0.1U/10V
C698 0.1U/10V

Pull-High: Address 1
NC : Address 0

Pace 0.1u close DVDD pins
Pace 10u close pin F3 "REGOUT[1]"
+1.2V_PHY
1.2V
C686 0.1U/10V
C687 0.1U/10V
C688 0.1U/10V
C689 10U/10V_0805 CAP0805

Pace close AVDDL pins
1.2V
PHY_AVDDL
L50 BLM18AG601SN1D
C690 0.1U/10V
C691 0.1U/10V
C692 10U/10V_0805 CAP0805

1.2V
PHY_PLLVDD
L51 BLM18AG601SN1D
C693 0.1U/10V
C694 10U/10V_0805 CAP0805

Layout Note:
Locate the RDAC resistor as close to the RDAC pin as possible and keep the trace between the pin and resistor and short and wide as possible.

Pace 10u close pin H3 "REGOUT[2]"
+2.5V_PHY
2.5V
C699 0.1U/10V
C700 0.1U/10V
C701 10U/10V_0805 CAP0805

2.5V
BIASVDD
L52 BLM18AG601SN1D
C702 0.1U/10V

2.5V
XTALVDD
L53 BLM18AG601SN1D
C703 0.1U/10V

EMI Reserve
PHY_XTALI
Y3
25MHz_12PF
PHY_XTALO
C204 10p/50V
C214 10p/50V

+3.3V_PHY
C765 0.1U/10V
C764 0.1U/10V
SPD10LED# C644 100p/50V
SPD100LED# C645 100p/50V
PHY_ACTLED C646 100p/50V
EMI

Auto-Negotiate
10/100/1000BASE-T
SPD10LED#
PHY_LED[4]
PHY_ACTLED
R552 4.7K
R553 *4.7K_NC
R554 *4.7K_NC

Title	PHY(B5071)
Size	Document Number: Dell/FLEX Confidential
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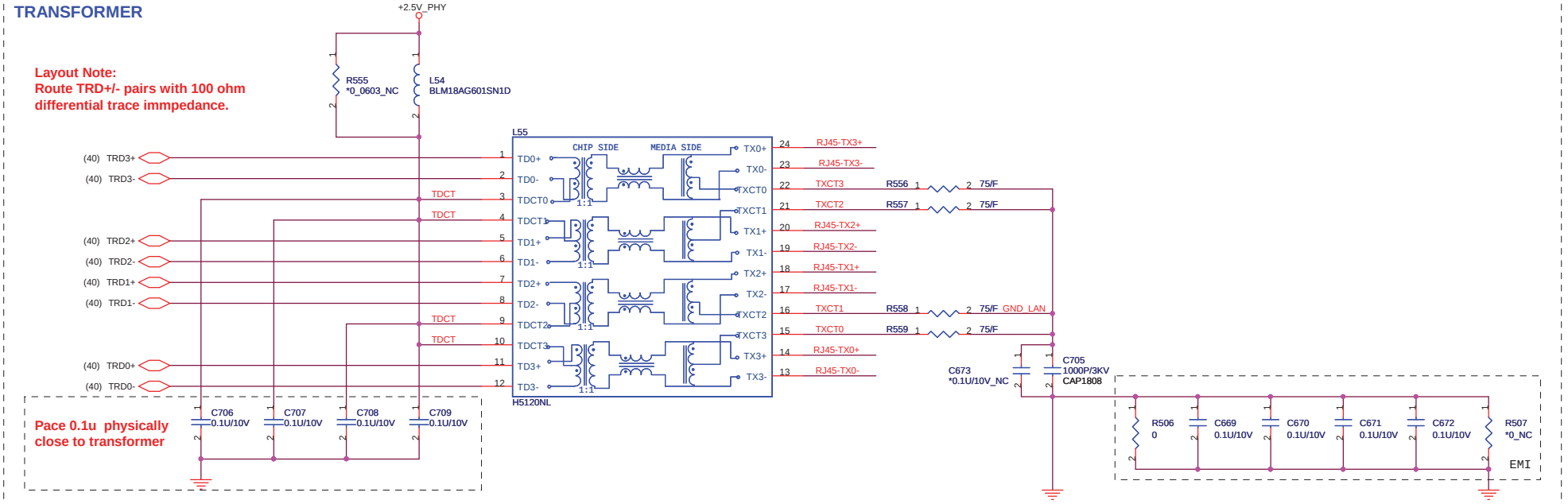
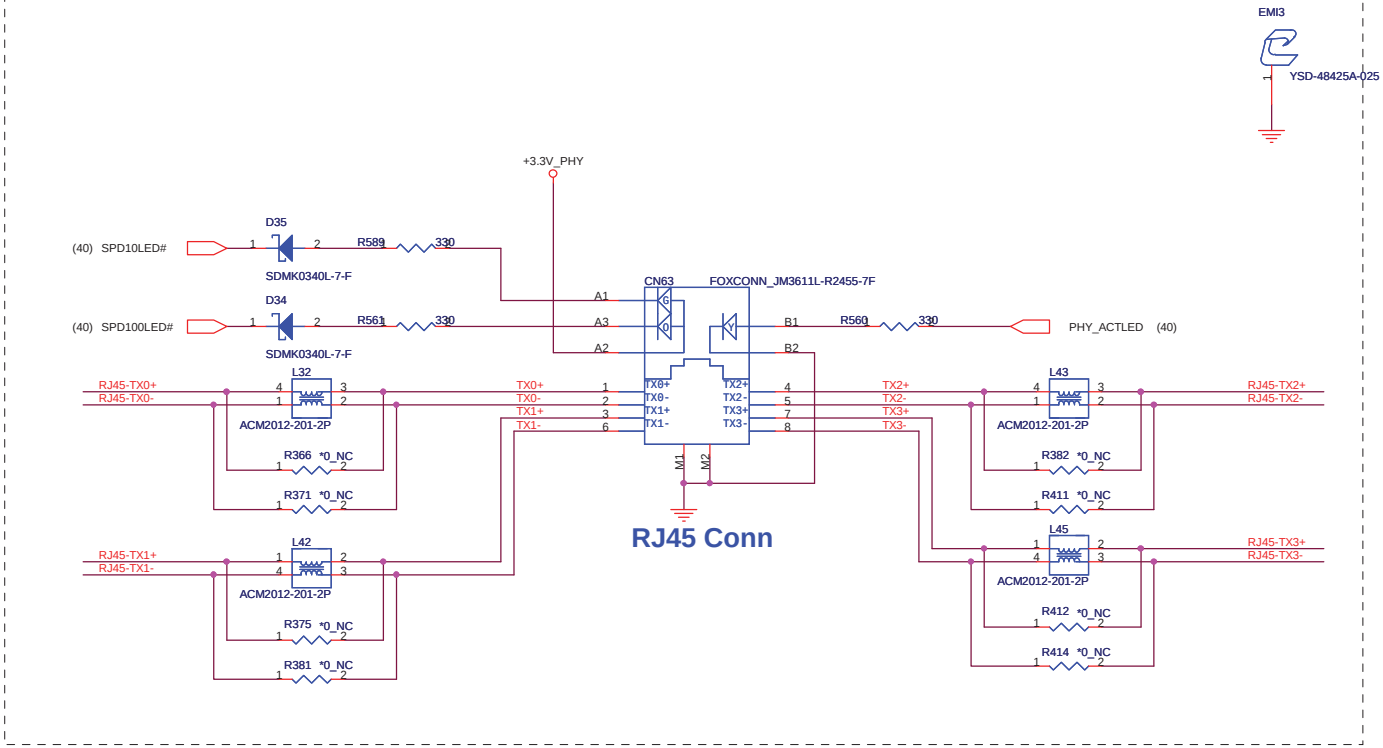
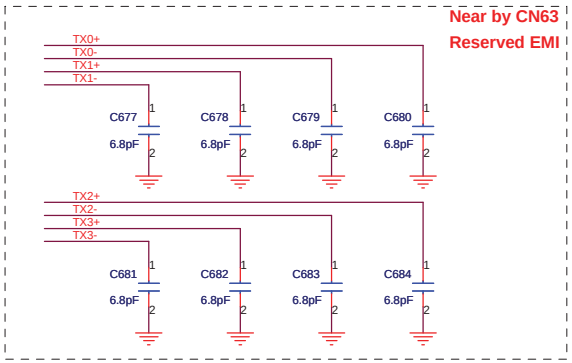
TRANSFORMER

Layout Note:
Route TRD+/- pairs with 100 ohm differential trace immpedance.

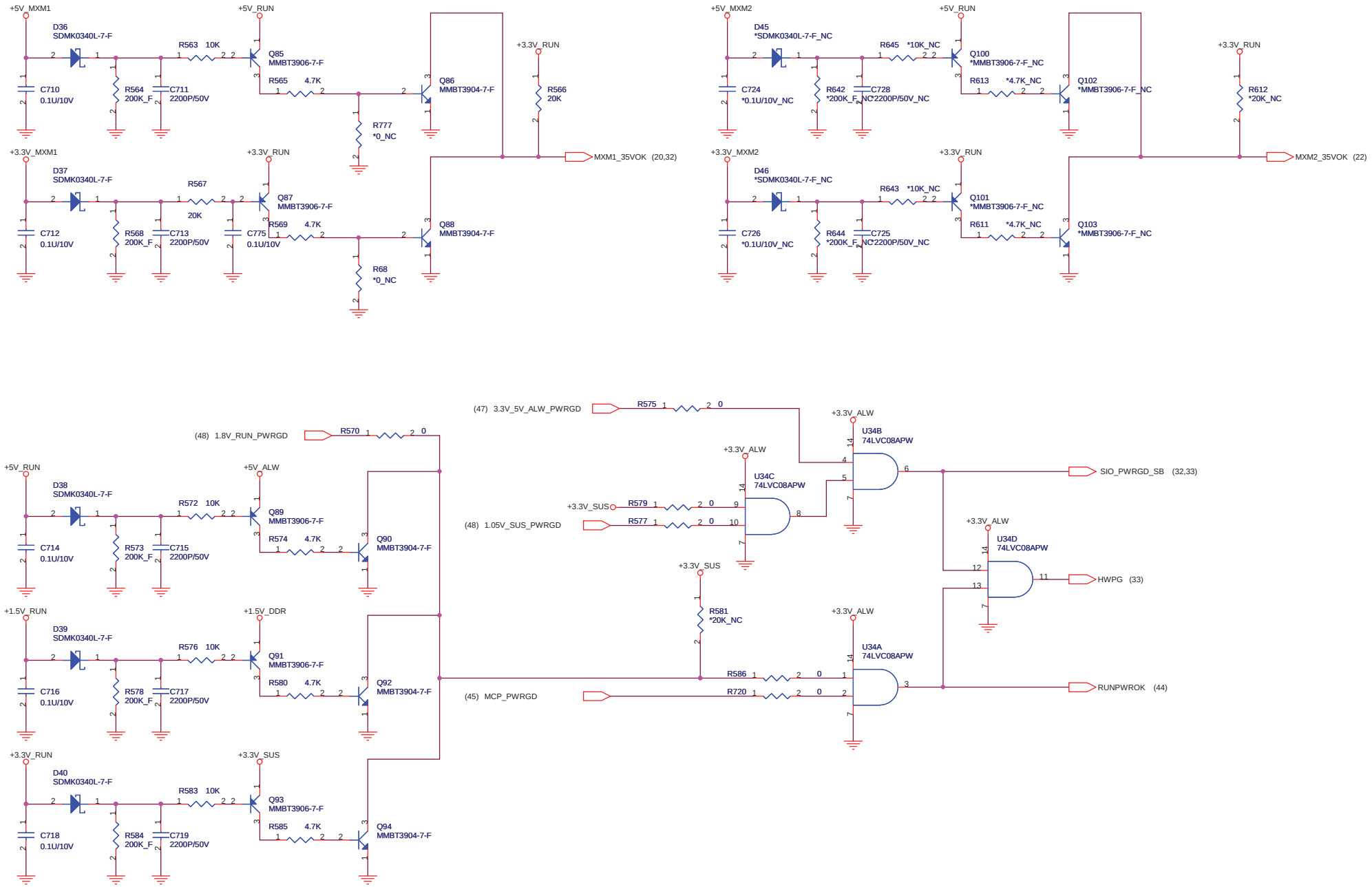


RJ-45 Connector

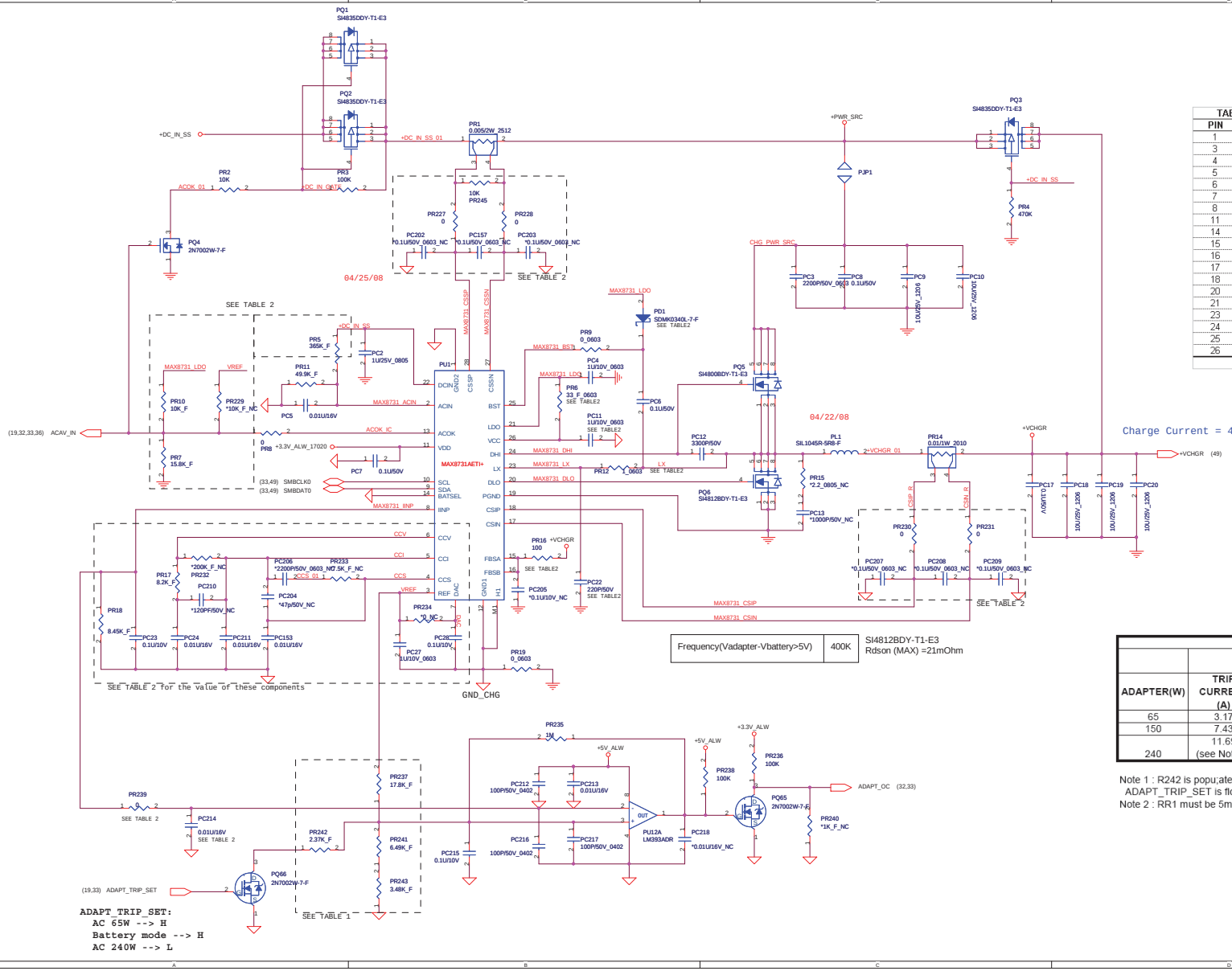




Title	RJ-45/TRANSFORM	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Thursday, March 12, 2009	Sheet 41 of 61	



Title	System Reset Circuit	
Size	Document Number: Dell/FLEX Confidential	Rev: A00
Date: Thursday, March 12, 2009	Sheet 42 of 61	



Note:
Component Values on Schematic are for MAX8731 only,
Please see table 1~3 for BQ24745 or ISL88731
component Values.

TABLE 3 , PIN NAME DIFFERENCES			
PIN	MAX8731A	ISL88731	bq24745
1	GND	NC	ICREF
3	REF	VREF	VREF
4	CCS	ICOMP	EAO
5	CCI	NC	EAI
6	CCV	VCOMP	FBO
7	DAC	NC	CE
8	IINP	ICM	VICM
11	VDD	VDDSMB	VDDSMB
14	BATSEL	NC	NC
15	FBSA	VFB	VFB
16	FBSB	NC	NC
17	CSIN	CSON	CSON
18	CSIP	CSOP	CSOP
20	DLO	LAGTE	LAGTE
21	LDO	VDDP	VDDP
23	LX	PHASE	PHASE
24	DHI	UGATE	UGATE
25	BST	BOOT	BOOT
26	VCC	VCC	ICOUT

"NC" means no-connect

TABLE 2 BOM DIFFERENCES			
REF DES	MAXIM	INTERSIL	TI
PR245	NO STUFF	10K , 0402 , 5%	NO STUFF
PR227	0 , 0402 , 5%	10 , 0402 , 5%	0 , 0402 , 5%
PR228	0 , 0402 , 5%	10 , 0402 , 5%	0 , 0402 , 5%
PC157	NO STUFF	0.1uF	0.1uF
PC202	NO STUFF	NO STUFF	0.1uF
PC203	NO STUFF	NO STUFF	NO STUFF
PR230	0 , 0402 , 5%	10 , 0402 , 5%	0 , 0402 , 5%
PR231	0 , 0402 , 5%	10 , 0402 , 5%	0 , 0402 , 5%
PC207	NO STUFF	NO STUFF	0.1uF
PC208	NO STUFF	0.1uF	0.1uF
PC209	NO STUFF	NO STUFF	NO STUFF
PR17	8.2K , 0402 , 5%	2.2K , 0402 , 5%	4.7K , 0402 , 5%
PR18	8.45K , 0402 , 1%	NO STUFF	NO STUFF
PR232	NO STUFF	NO STUFF	200K , 0402 , 5%
PR233	NO STUFF	NO STUFF	7.5K , 0402 , 5%
PR234	NO STUFF	NO STUFF	0 , 0402 , 5%
PC23	0.1uF , 0402 , 10V	NO STUFF	200pF , 0402 , 10V
PC24	0.01uF	0.01uF	NO STUFF
PC210	NO STUFF	NO STUFF	130pF , 0402 , 10V
PC211	0.01uF	NO STUFF	NO STUFF
PC153	0.01uF	0.01uF	NO STUFF
PC204	NO STUFF	NO STUFF	51pF , 0402 , 10V
PC206	NO STUFF	NO STUFF	2000pF , 0402 , 10V
PC27	1.0uF , 0603 , 10V	NO STUFF	1.0uF , 0603 , 10V
PC28	0.1uF , 0402 , 10V	NO STUFF	NO STUFF
PR10	10K , 0402 , 1%	10K , 0402 , 1%	NO STUFF
PR7	15.8K , 0402 , 1%	15.8K , 0402 , 1%	NO STUFF
PR229	NO STUFF	NO STUFF	10K , 0402 , 5%
PR5	365K , 0402 , 1%	215K , 0402 , 1%	309K , 0402 , 1%
PD1	CH501H-40PT	NO STUFF	CH501H-40PT
PR6	33 , 0603 , 1%	33 , 0603 , 1%	NO STUFF
PC11	1.0uF , 0603 , 10V	1.0uF , 0603 , 10V	NO STUFF
PR12	1 , 0603 , 1%	0 , 0603 , 5%	0 , 0603 , 5%
PR16	100 , 0402 , 5%	100 , 0402 , 5%	0 , 0402 , 5%
PC22	220pF , 0402 , 50V	NO STUFF	NO STUFF
PR239	0 , 0402 , 5%	8.45K , 0402 , 1%	8.45K , 0402 , 1%
PC214	0.01uF	0.1uF	0.1uF
PC12	3.3nF	NO STUFF	NO STUFF

Frequency(Vadapter-Vbattery>5V)	400K

SI4812BDY-T1-E3
Rdson (MAX) =21mOhm

TABLE 1								
			MAX8731A/ISL88731			bq24745		
ADAPTER(W)	TRIP CURRENT (A)	R237	R241	R243	R242 (see Note 1)	R241	R243	R242 (see Note 1)
65	3.17	57.6K	13K	105	24.9K	12.4K	205	24.3K
150	7.43	30.9K	24.9K	499	10.7K	23.7K	499	10.5K
240	11.69 (see Note 2)	17.8K	6.49K	3.48K	2.37K	8.45K	1.18K	23.2K

Note 1 : R242 is popu;ated if ADAPT_TRIP_SET is used to program for the next lower adapter
ADAPT_TRIP_SET is floating for the higher adapter , grounded for the lower adapter
Note 2 : RR1 must be 5mOhms instead of 10mOhms for the 240W adapter

Title: Charger (MAX8731)
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NOTE:
Component Values on Schematic are for MAXIM MAX8786 only.

IMVP-6 solution for Penryn:
TDC: 55A
OCP: 76A

4/11 Andy: note modify

BSC030N03MS
Rdson (MAX) =3.8mOhm

GND_VHCORE

Title	CPU_CORE (MAX8786)
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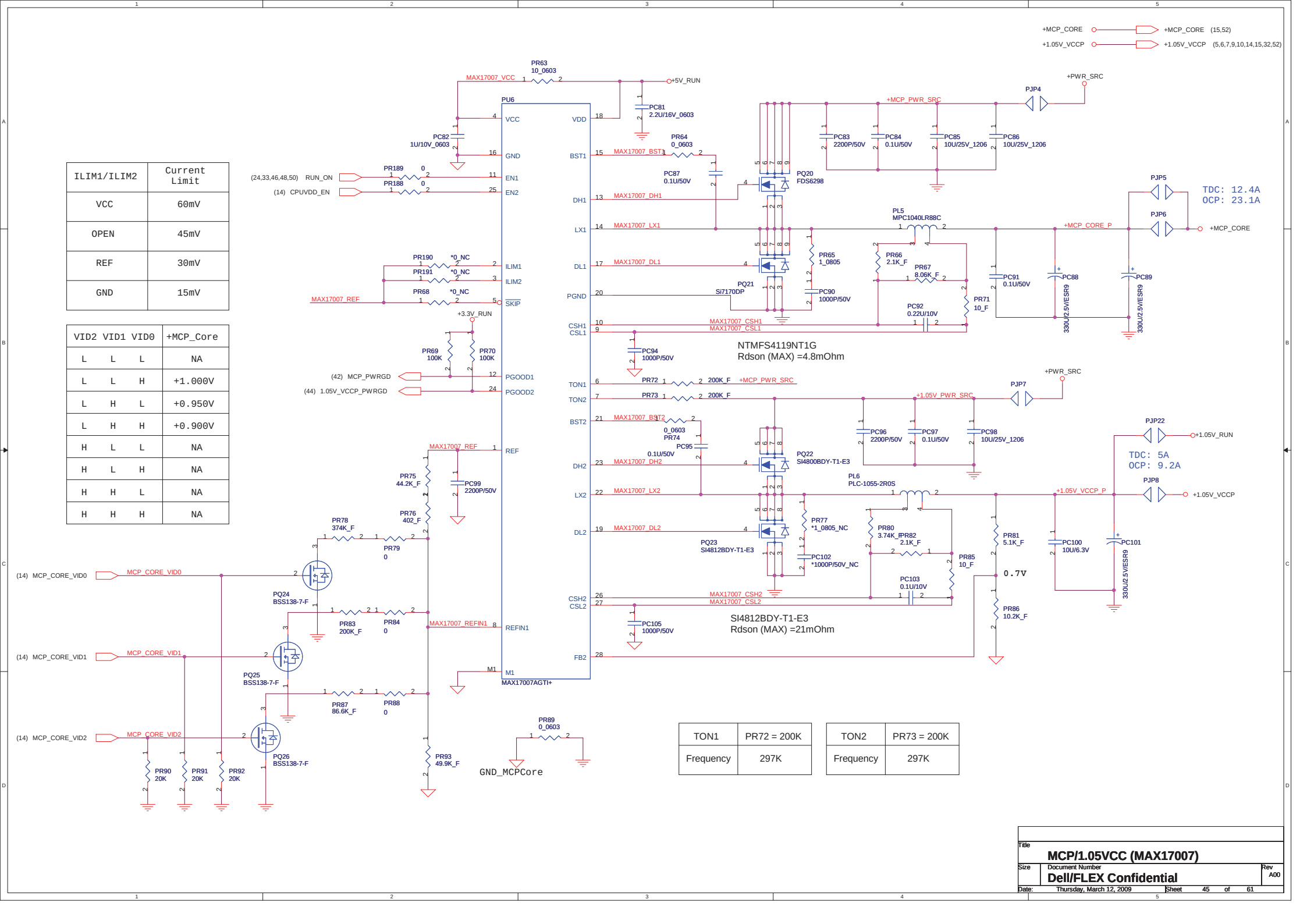

ILIM1/ILIM2	Current Limit
VCC	60mV
OPEN	45mV
REF	30mV
GND	15mV

VID2	VID1	VID0	+MCP_Core
L	L	L	NA
L	L	H	+1.000V
L	H	L	+0.950V
L	H	H	+0.900V
H	L	L	NA
H	L	H	NA
H	H	L	NA
H	H	H	NA

TON1	PR72 = 200K
Frequency	297K

TON2	PR73 = 200K
Frequency	297K

Title	MCP/1.05VCC (MAX17007)		
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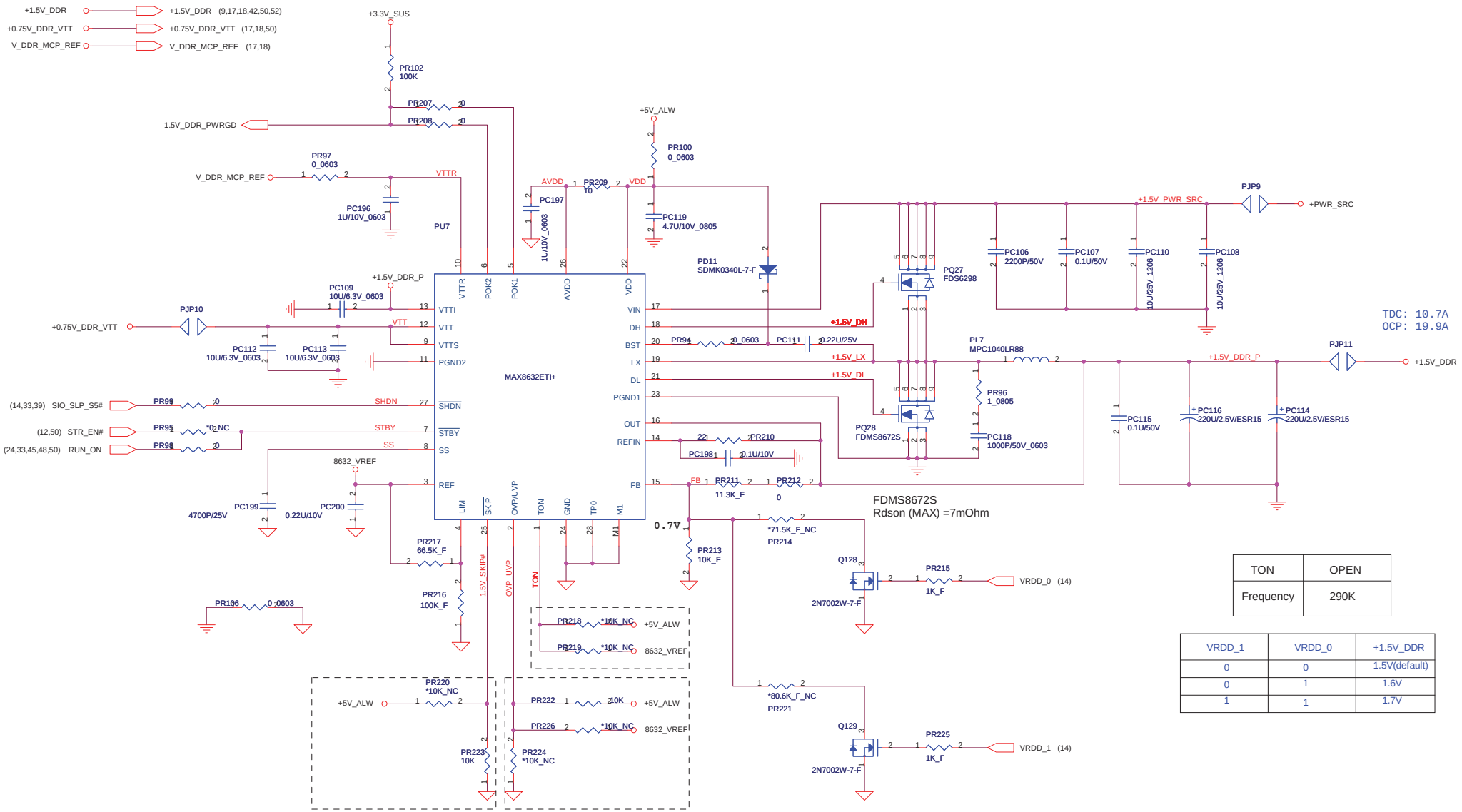

TON	OPEN
Frequency	290K

VRDD_1	VRDD_0	+1.5V_DDR
0	0	1.5V(default)
0	1	1.6V
1	1	1.7V

Title	DDR1.5/0.75(TPS51116)	
Size	Document Number	Rev
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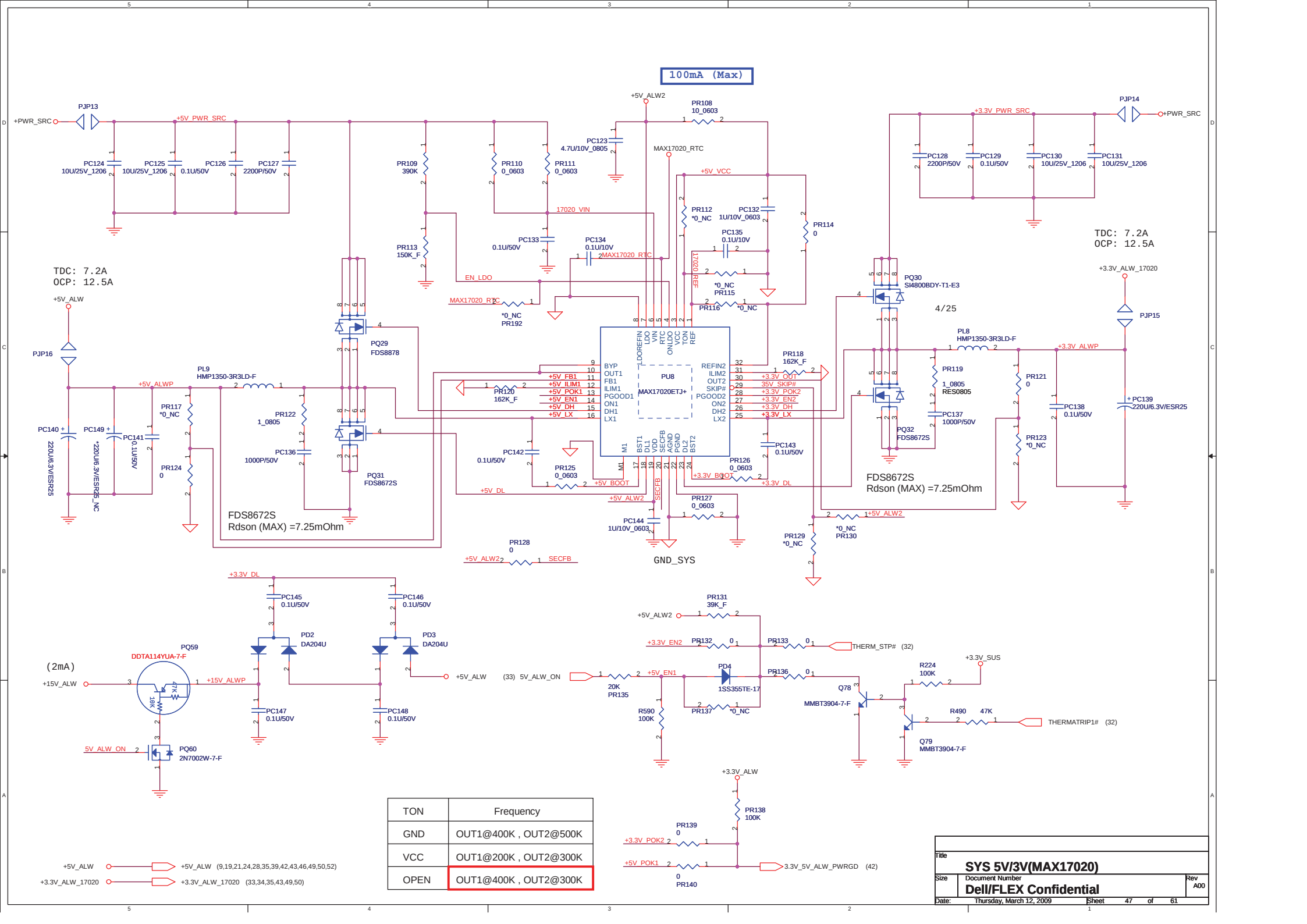
100mA (Max)
TDC: 7.2A
OCP: 12.5A
FDS8672S
Rdson (MAX) =7.25mOhm
TDC: 7.2A
OCP: 12.5A
FDS8672S
Rdson (MAX) =7.25mOhm
4/25
(2mA)
GND_SYS
+PWR_SRC
+5V_PWR_SRC
+3.3V_PWR_SRC
+5V_ALW2
+5V_VCC
+5V_ALW
+5V_ALWP
+3.3V_ALW_17020
+3.3V_ALWP
+3.3V_DL
+15V_ALW
+15V_ALWP
MAX17020_RTC
17020_VIN
EN_LDO
+5V_FB1
+5V_ILIM1
+5V_POK1
+5V_EN1
+5V_DH
+5V_LX
+5V_BOOT
+3.3V_BOOT
+3.3V_OUT
35V_SKIP#
+3.3V_POK2
+3.3V_EN2
+3.3V_DH
+3.3V_LX
SECFB
+5V_DL
+3.3V_DL
5V_ALW_ON
+3.3V_ALW
+3.3V_SUS
THERM_STP# (32)
THERMATRIP1# (32)
(33) 5V_ALW_ON
3.3V_5V_ALW_PWRGD (42)
PJP13
PJP14
PJP15
PJP16
PU8
MAX17020ETJ+
PQ29
FDS8878
PQ30
SI4800BDY-T1-E3
PQ31
FDS8672S
PQ32
FDS8672S
PQ59
DDTA114YUA-7-F
PQ60
2N7002W-7-F
PD2
DA204U
PD3
DA204U
PD4
1SS355TE-17
Q78
MMBT3904-7-F
Q79
MMBT3904-7-F
PL8
HMP1350-3R3LD-F
PL9
HMP1350-3R3LD-F
PR108 10_0603
PR109 390K
PR110 0_0603
PR111 0_0603
PR112 *0_NC
PR113 150K_F
PR114 0
PR115 *0_NC
PR116 *0_NC
PR117 *0_NC
PR118 162K_F
PR119 1_0805 RES0805
PR120 162K_F
PR121 0
PR122 1_0805
PR123 *0_NC
PR124 0
PR125 0_0603
PR126 0_0603
PR127 0_0603
PR128 0
PR129 *0_NC
PR130 *0_NC
PR131 39K_F
PR132 0
PR133 0
PR135 20K
PR136 0
PR137 *0_NC
PR138 100K
PR139 0
PR140 0
PR192 *0_NC
R224 100K
R490 47K
R590 100K
PC123 4.7U/10V_0805
PC124 10U/25V_1206
PC125 10U/25V_1206
PC126 0.1U/50V
PC127 2200P/50V
PC128 2200P/50V
PC129 0.1U/50V
PC130 10U/25V_1206
PC131 10U/25V_1206
PC132 1U/10V_0603
PC133 0.1U/50V
PC134 0.1U/10V
PC135 0.1U/10V
PC136 1000P/50V
PC137 1000P/50V
PC138 0.1U/50V
PC139 220U/6.3V/ESR25
PC140 220U/6.3V/ESR25
PC141 0.1U/50V
PC142 0.1U/50V
PC143 0.1U/50V
PC144 1U/10V_0603
PC145 0.1U/50V
PC146 0.1U/50V
PC147 0.1U/50V
PC148 0.1U/50V
PC149 *220U/6.3V/ESR25_NC
LDOREFIN
LDO
VIN
RTC
ONLDO
VCC
TON
REF
BYP
OUT1
FB1
ILIM1
PGOOD1
ON1
DH1
LX1
REFIN2
ILIM2
OUT2
SKIP#
PGOOD2
ON2
DH2
LX2
M1
BST1
DL1
VDD
SECFB
AGND
PGND
DL2
BST2
TON
Frequency
GND
OUT1@400K , OUT2@500K
VCC
OUT1@200K , OUT2@300K
OPEN
OUT1@400K , OUT2@300K
+5V_ALW (9,19,21,24,28,35,39,42,43,46,49,50,52)
+3.3V_ALW_17020 (33,34,35,43,49,50)
Title
SYS 5V/3V(MAX17020)
Size
Document Number
Dell/FLEX Confidential
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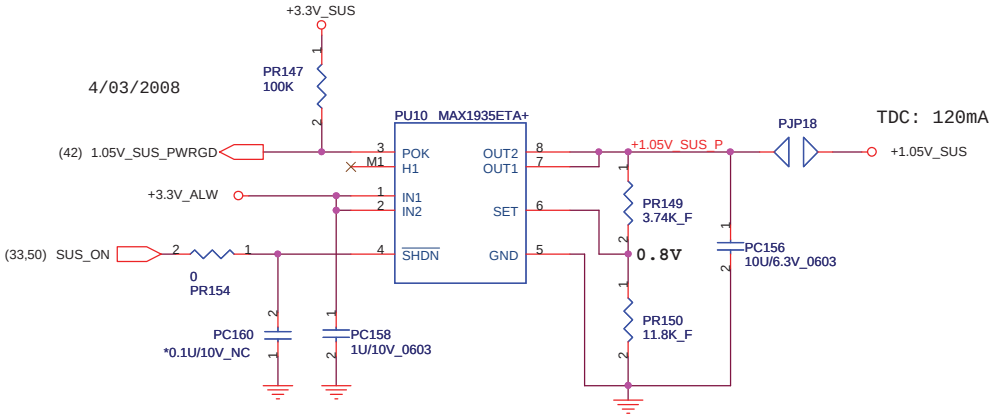

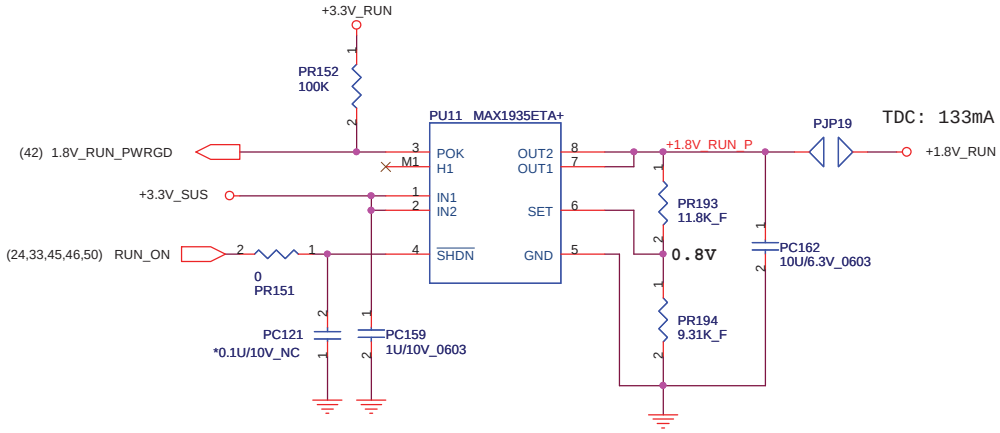

Title	1.1V_SUS/1.8V_RUN	
Size	Document Number: Dell Confidential	Rev: A00
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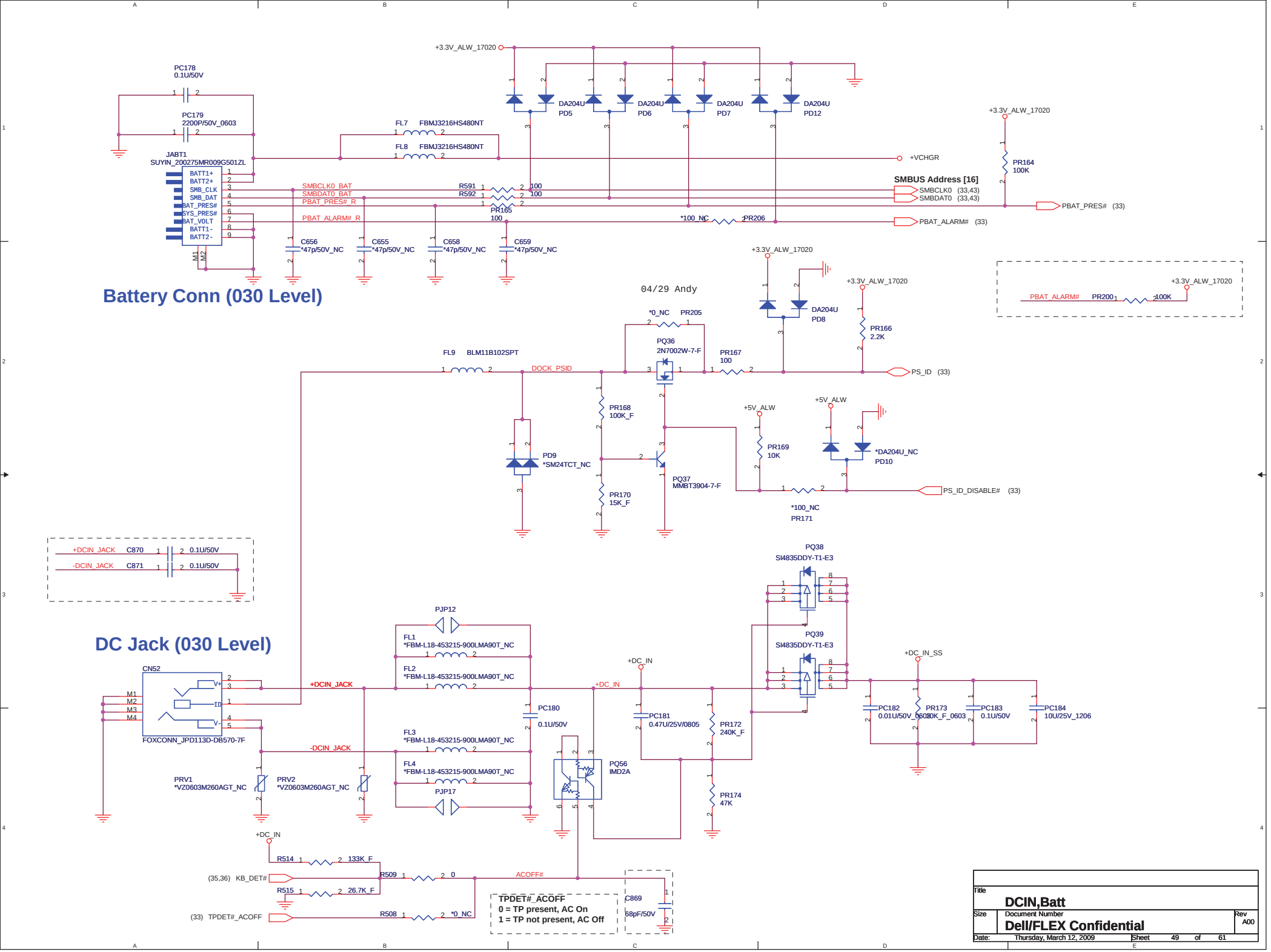
Battery Conn (030 Level)
DC Jack (030 Level)
04/29 Andy
+3.3V_ALW_17020
PC178
0.1U/50V
PC179
2200P/50V_0603
JABT1
SUYIN_200275MR009G501ZL
BATT1+
BATT2+
SMB_CLK
SMB_DAT
BAT_PRES#
SYS_PRES#
BAT_V0LT
BATT1-
BATT2-
FL7 FBMJ3216HS480NT
FL8 FBMJ3216HS480NT
DA204U PD5
DA204U PD6
DA204U PD7
DA204U PD12
+VCHGR
SMBCLK0_BAT
SMBDAT0_BAT
PBAT_PRES#_R
PBAT_ALARM#_R
R591 100
R592 100
PR165 100
*100_NC PR206
SMBUS Address [16]
SMBCLK0 (33,43)
SMBDAT0 (33,43)
PR164 100K
PBAT_PRES# (33)
PBAT_ALARM# (33)
C656 *47p/50V_NC
C655 *47p/50V_NC
C658 *47p/50V_NC
C659 *47p/50V_NC
DA204U PD8
PR166 2.2K
PBAT_ALARM# PR200 100K
*0_NC PR205
PQ36 2N7002W-7-F
PR167 100
PS_ID (33)
FL9 BLM11B102SPT
DOCK_PSID
PR168 100K_F
PD9 *SM24TCT_NC
PR170 15K_F
PQ37 MMBT3904-7-F
+5V_ALW
PR169 10K
*DA204U_NC PD10
PS_ID_DISABLE# (33)
*100_NC PR171
+DCIN_JACK C870 0.1U/50V
-DCIN_JACK C871 0.1U/50V
PQ38 SI4835DDY-T1-E3
PQ39 SI4835DDY-T1-E3
PJP12
FL1 *FBM-L18-453215-900LMA90T_NC
FL2 *FBM-L18-453215-900LMA90T_NC
FL3 *FBM-L18-453215-900LMA90T_NC
FL4 *FBM-L18-453215-900LMA90T_NC
PJP17
CN52
FOXCONN_JPD113D-DB570-7F
+DCIN_JACK
-DCIN_JACK
+DC_IN
PC180 0.1U/50V
PC181 0.47U/25V/0805
PR172 240K_F
PR174 47K
PQ56 IMD2A
+DC_IN_SS
PC182 0.01U/50V_0603
PR173 80K_F_0603
PC183 0.1U/50V
PC184 10U/25V_1206
PRV1 *VZ0603M260AGT_NC
PRV2 *VZ0603M260AGT_NC
R514 133K_F
R509 0
R515 26.7K_F
R508 *0_NC
(35,36) KB_DET#
(33) TPDET#_ACOFF
ACOFF#
TPDET#_ACOFF
0 = TP present, AC On
1 = TP not present, AC Off
C869 68pF/50V
Title
DCIN,Batt
Size
Document Number
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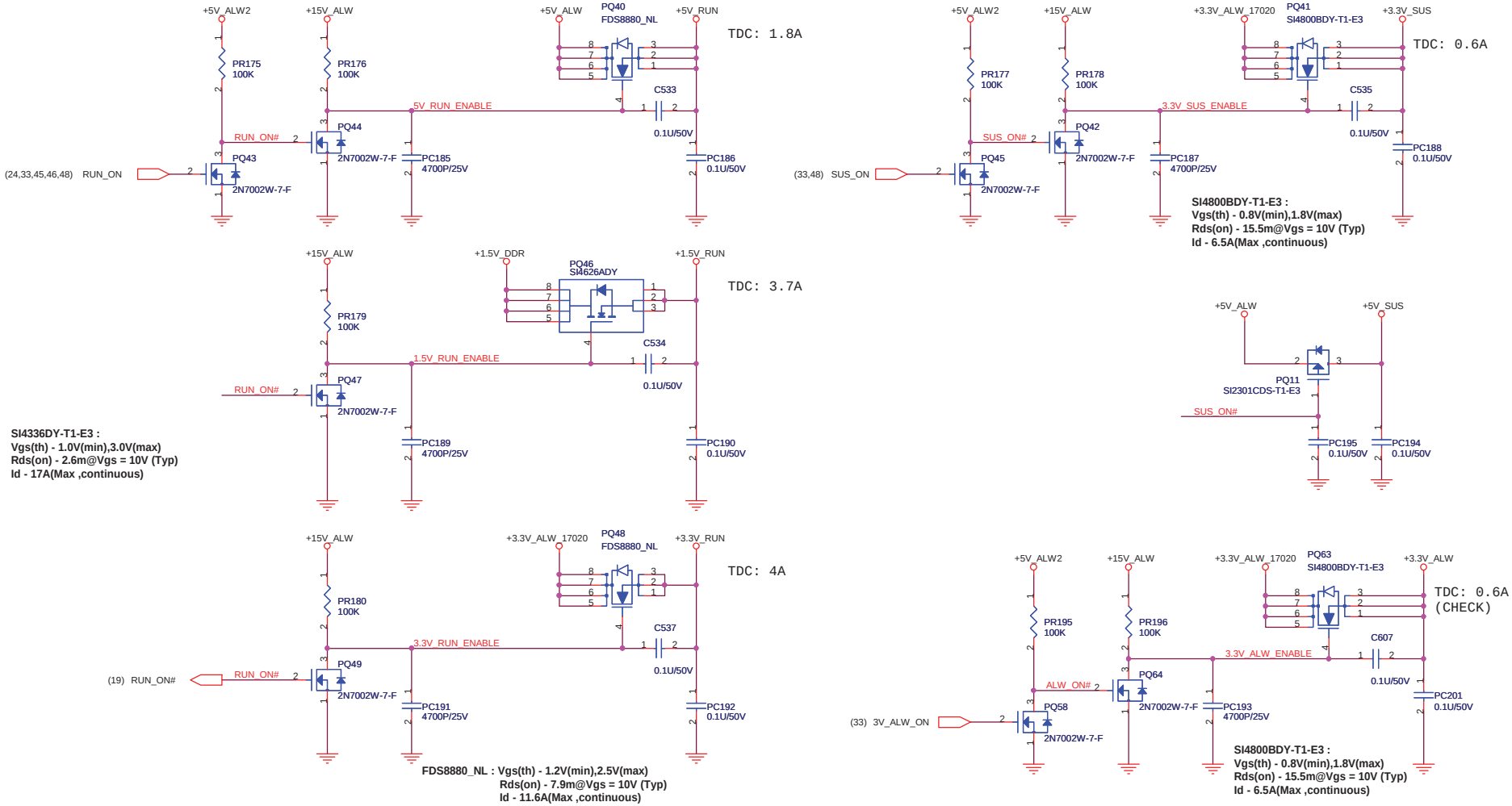
+5V_ALW2
+15V_ALW
+5V_ALW
PQ40
FDS8880_NL
+5V_RUN
TDC: 1.8A
PR175
100K
PR176
100K
5V_RUN_ENABLE
C533
0.1U/50V
RUN_ON#
PQ44
2N7002W-7-F
PC185
4700P/25V
PC186
0.1U/50V
(24,33,45,46,48) RUN_ON
PQ43
2N7002W-7-F
+5V_ALW2
+15V_ALW
+3.3V_ALW_17020
PQ41
SI4800BDY-T1-E3
+3.3V_SUS
TDC: 0.6A
PR177
100K
PR178
100K
3.3V_SUS_ENABLE
C535
0.1U/50V
PC188
0.1U/50V
SUS_ON#
PQ42
2N7002W-7-F
PC187
4700P/25V
(33,48) SUS_ON
PQ45
2N7002W-7-F
SI4800BDY-T1-E3 :
Vgs(th) - 0.8V(min),1.8V(max)
Rds(on) - 15.5m@Vgs = 10V (Typ)
Id - 6.5A(Max ,continuous)
+15V_ALW
+1.5V_DDR
PQ46
SI4626ADY
+1.5V_RUN
TDC: 3.7A
PR179
100K
1.5V_RUN_ENABLE
C534
0.1U/50V
RUN_ON#
PQ47
2N7002W-7-F
PC189
4700P/25V
PC190
0.1U/50V
SI4336DY-T1-E3 :
Vgs(th) - 1.0V(min),3.0V(max)
Rds(on) - 2.6m@Vgs = 10V (Typ)
Id - 17A(Max ,continuous)
+5V_ALW
+5V_SUS
PQ11
SI2301CDS-T1-E3
SUS_ON#
PC195
0.1U/50V
PC194
0.1U/50V
+15V_ALW
+3.3V_ALW_17020
PQ48
FDS8880_NL
+3.3V_RUN
TDC: 4A
PR180
100K
3.3V_RUN_ENABLE
C537
0.1U/50V
(19) RUN_ON#
RUN_ON#
PQ49
2N7002W-7-F
PC191
4700P/25V
PC192
0.1U/50V
FDS8880_NL : Vgs(th) - 1.2V(min),2.5V(max)
Rds(on) - 7.9m@Vgs = 10V (Typ)
Id - 11.6A(Max ,continuous)
+5V_ALW2
+15V_ALW
+3.3V_ALW_17020
PQ63
SI4800BDY-T1-E3
+3.3V_ALW
TDC: 0.6A
(CHECK)
PR195
100K
PR196
100K
3.3V_ALW_ENABLE
C607
0.1U/50V
PC201
0.1U/50V
ALW_ON#
PQ64
2N7002W-7-F
PC193
4700P/25V
(33) 3V_ALW_ON
PQ58
2N7002W-7-F
SI4800BDY-T1-E3 :
Vgs(th) - 0.8V(min),1.8V(max)
Rds(on) - 15.5m@Vgs = 10V (Typ)
Id - 6.5A(Max ,continuous)
Reserve discharge path
+5V_RUN
+3.3V_RUN
+1.5V_RUN
+3.3V_SUS
PR181
*1K_NC
PR182
*1K_NC
PR183
*1K_NC
PR184
*1K_NC
RUN_ON#
SUS_ON#
PQ50
*2N7002W-7-F_NC
PQ51
*2N7002W-7-F_NC
PQ52
*2N7002W-7-F_NC
PQ53
*2N7002W-7-F_NC
+5V_ALW2
+0.75V_DDR_VTT
PR185
100K
PR186
10
PR187
*0_NC
RUN_ON#
STR_EN
PQ54
2N7002W-7-F
PQ55
2N7002W-7-F
(12,46) STR_EN#
Title
RUN POWER SW
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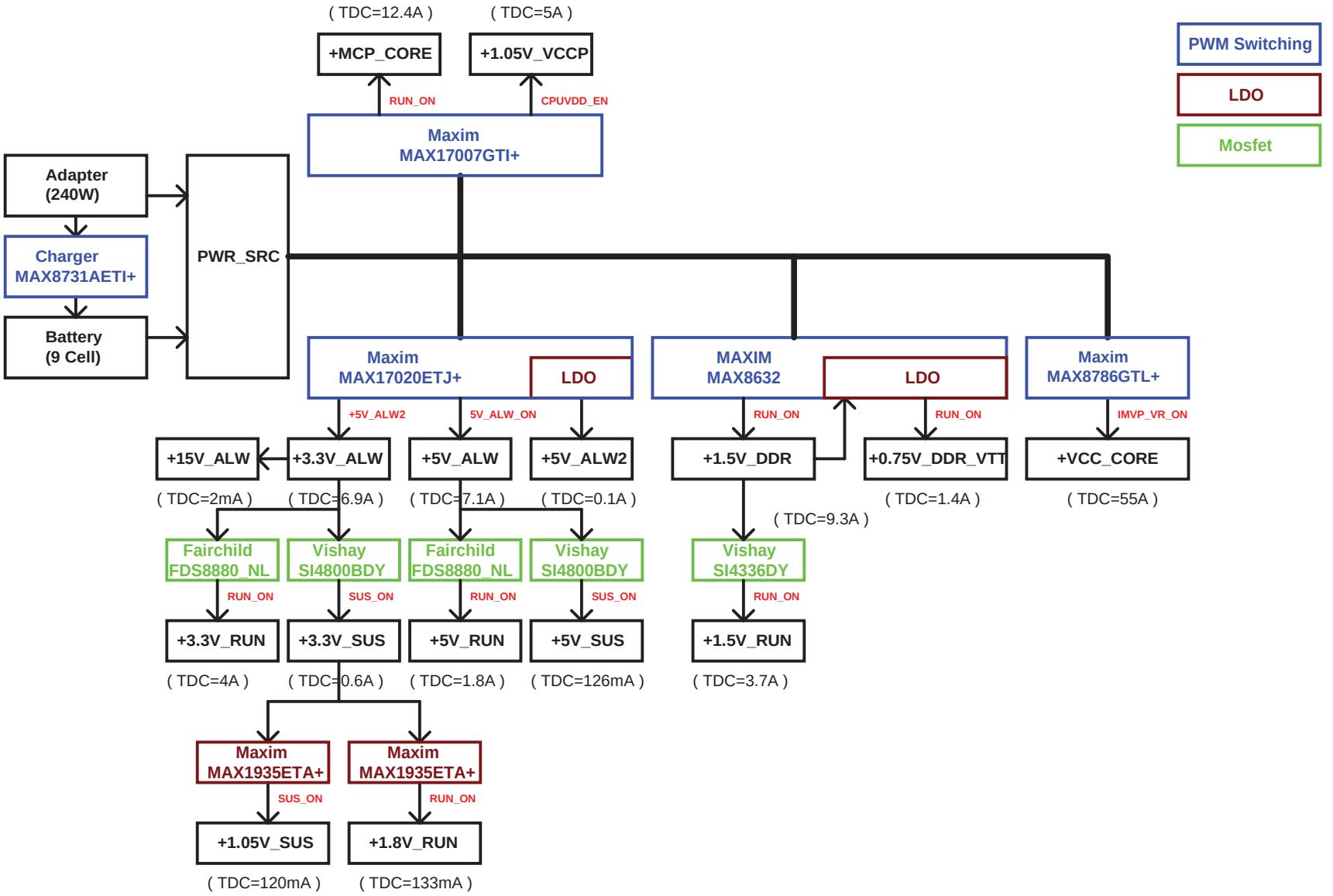

Title	Power Block Diagram	
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Screw Hole

H1 NPTH7_2.8
H2 NPTH7_2.8
H3 NPTH7_2.8
H4 NPTH7_2.8
H5
H6 NPTH7_2.8
H7 NPTH7_2.8
H8 NPTH9B7_2.8
H9 NPTH9B7_2.8
H10 NPTH9B7_2.8
H11 PTH9B7_2.8
H12 NPTH9B7_2.8
H13 NPTH9B7_2.8
H14 PTH6B0_1.2
H15 PTH6B0_1.2
H16 PTH0B7_6
H17 PTH0B7_6
H18 PTH0B7_6
H19 PTH0B7_6

FID

FID1 NC, NO CONNECT TO ANY.
FID2 NC, NO CONNECT TO ANY.
FID3 NC, NO CONNECT TO ANY.
FID4 NC, NO CONNECT TO ANY.
FID5 NC, NO CONNECT TO ANY.
FID6 NC, NO CONNECT TO ANY.
FID7 NC, NO CONNECT TO ANY.
FID8 NC, NO CONNECT TO ANY.

Unused Gate

+3.3V_RUN U44C 74LVC08APW
+3.3V_RUN U44D 74LVC08APW
+5V_ALW PU12B LM393ADR (OUT)

+PWR_SRC
C273 0.1U/50V_0603
C385 0.1U/50V_0603
C388 0.1U/50V_0603
C445 0.1U/50V_0603
C446 0.1U/50V_0603
C448 0.1U/50V_0603

Moat Cap

+3.3V_RUN / +5V_ALW
C674 C675 C676 0.1U/10V
C892 C893 0.1U/10V

+MCP_CORE / +1.05V_VCCP
C732 0.1U/10V

+PWR_SRC / +MCP_CORE
C389 0.1U/50V_0603

+5V_RUN / +3.3V_KBVCC
C743 0.1U/10V

+3.3V_RUN / +PWR_SRC
C243 C244 C245 0.1U/50V_0603

+5V_RUN / +PWR_SRC
C269 C272 0.1U/50V_0603

+PWR_SRC_MXM1
C268 C271 C270 C447 0.1U/50V_0603

+1.5V_DDR / +PWR_SRC
C249 C264 C265 C266 C267 0.1U/50V_0603

+1.05V_VCCP / +PWR_SRC
C246 C247 C248 0.1U/50V_0603

+5V_RUN / +3.3V_RUN
C744 C745 C746 C747 C757 0.1U/10V
C758 C759 C760 0.1U/10V
C767 C766 C768 C770 C769 C771 C773 C772 C774 0.1U/10V

+1.05V_VCCP / +3.3V_RUN
C721 C720 C722 C723 C727 C729 C730 C731 C752 C753 C754 C755 C756 0.1U/10V
C761 C762 2200P/50V
C889 C888 C891 C890 0.1U/10V

+MCP_CORE / +1.5V_DDR
C735 0.1U/10V

+1.5V_DDR / +1.05V_VCCP
C733 C734 0.1U/10V
C748 C763 2200P/50V

+1.5V_DDR
C736 C737 C738 C739 C740 0.1U/10V

+5V_ALW / +5V_RUN
C741 0.1U/10V
C749 C750 C751 0.1U/10V
C872 C873 C878 C879 C880 C887 0.1U/10V

+3.3V_RUN / +3.3V_KBVCC
C742 0.1U/10V

+5V_ALW / +PWR_SRC
C240 C241 C242 0.1U/50V_0603

Title	PAD & SCREW	
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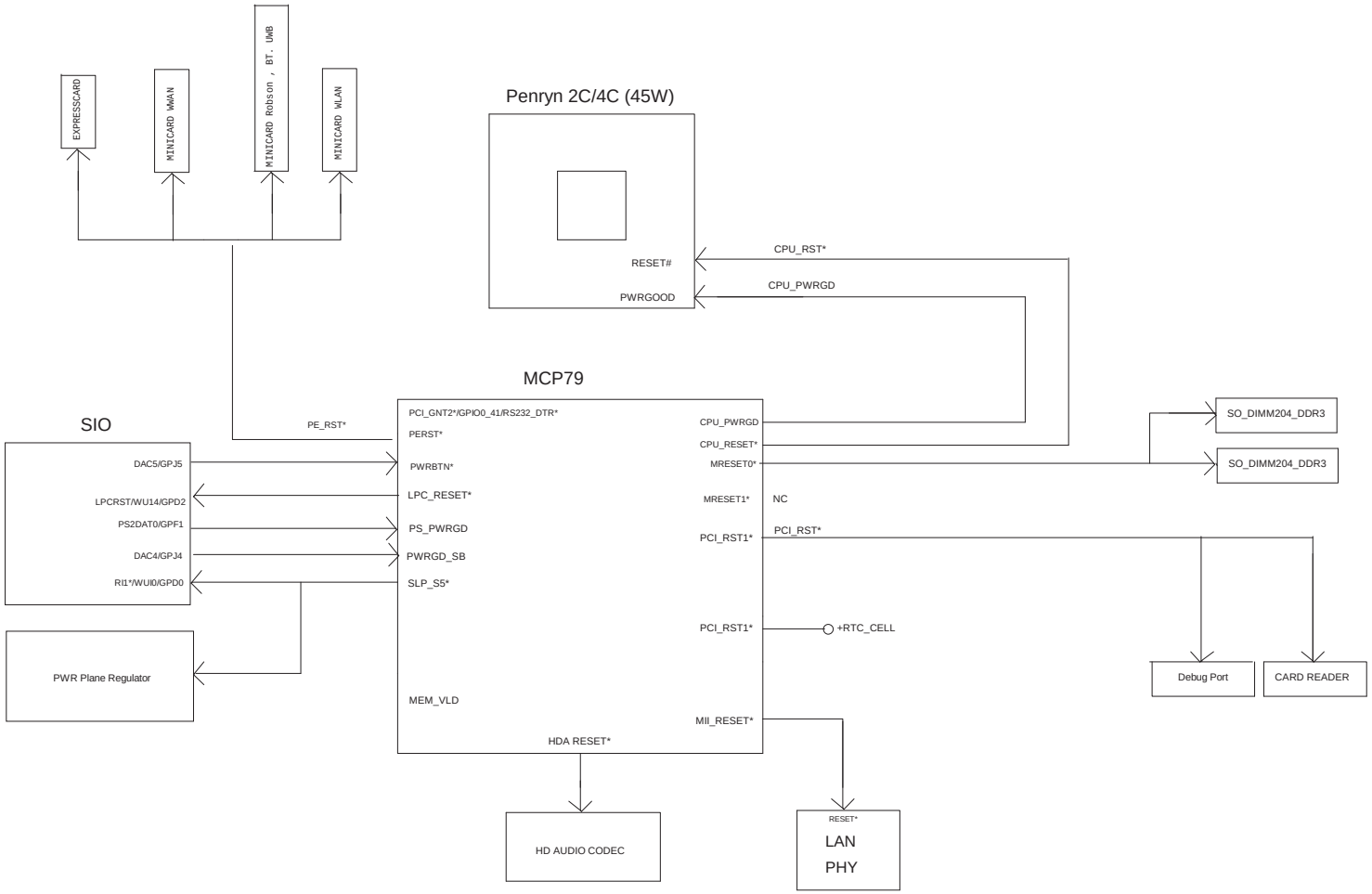
RESET MAP



Title	PCI RESET MAP	
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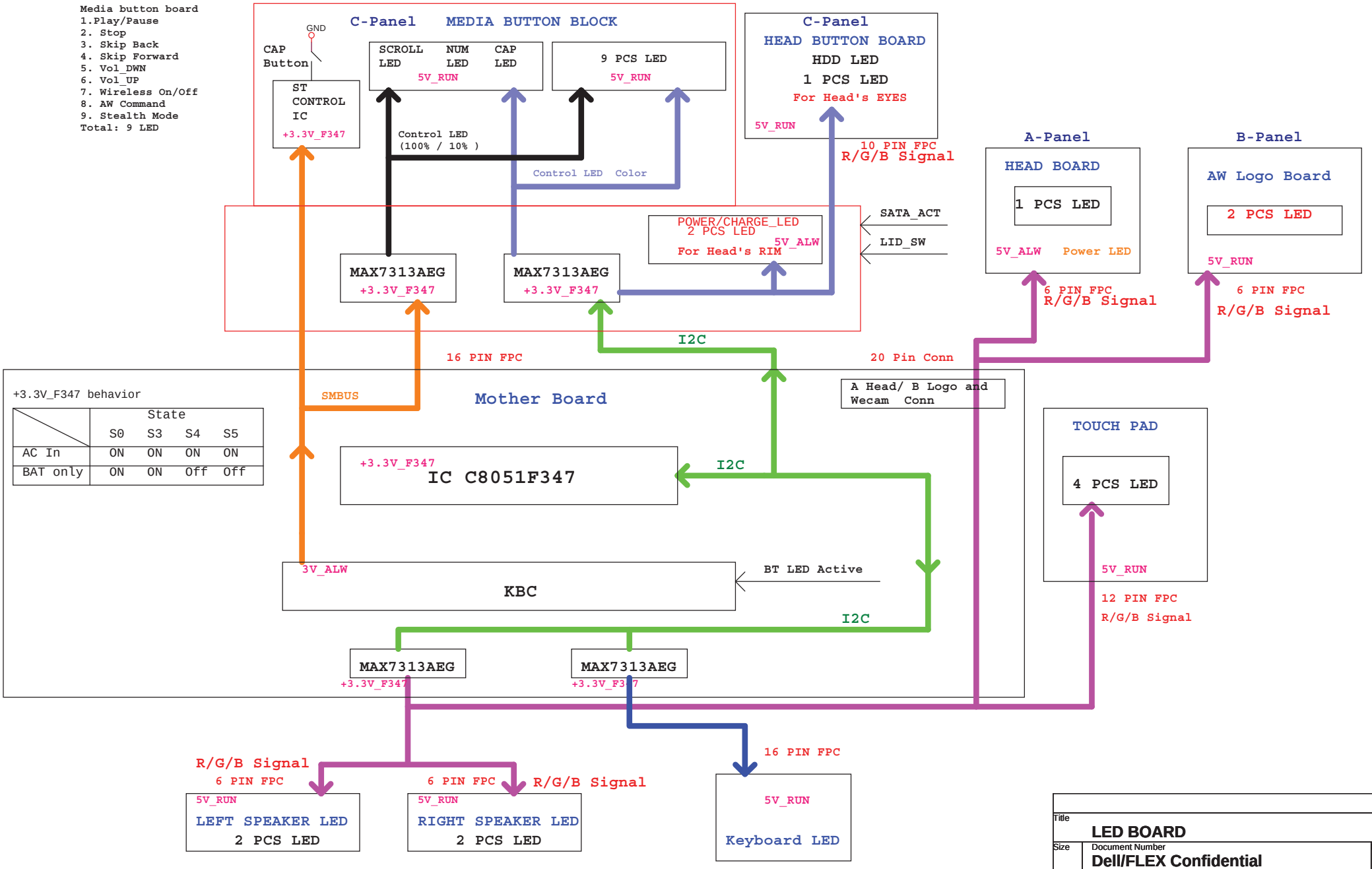
Media button board
1.Play/Pause
2. Stop
3. Skip Back
4. Skip Forward
5. Vol_DWN
6. Vol_UP
7. Wireless On/Off
8. AW Command
9. Stealth Mode
Total: 9 LED
C-Panel MEDIA BUTTON BLOCK
GND
CAP Button
ST CONTROL IC
+3.3V_F347
SCROLL LED
NUM LED
CAP LED
5V_RUN
9 PCS LED
5V_RUN
Control LED (100% / 10%)
Control LED Color
C-Panel
HEAD BUTTON BOARD
HDD LED
1 PCS LED
For Head's EYES
5V_RUN
10 PIN FPC
R/G/B Signal
A-Panel
HEAD BOARD
1 PCS LED
5V_ALW
Power LED
B-Panel
AW Logo Board
2 PCS LED
5V_RUN
6 PIN FPC
R/G/B Signal
6 PIN FPC
R/G/B Signal
POWER/CHARGE_LED
2 PCS LED
5V_ALW
For Head's RIM
SATA_ACT
LID_SW
MAX7313AEG
+3.3V_F347
MAX7313AEG
+3.3V_F347
I2C
16 PIN FPC
20 Pin Conn
SMBUS
Mother Board
A Head/ B Logo and Wecam Conn
+3.3V_F347 behavior
State
S0 S3 S4 S5
AC In ON ON ON ON
BAT only ON ON Off Off
+3.3V_F347
IC C8051F347
I2C
TOUCH PAD
4 PCS LED
5V_RUN
12 PIN FPC
R/G/B Signal
3V_ALW
KBC
BT LED Active
I2C
MAX7313AEG
+3.3V_F347
MAX7313AEG
+3.3V_F347
R/G/B Signal
6 PIN FPC
5V_RUN
LEFT SPEAKER LED
2 PCS LED
6 PIN FPC
R/G/B Signal
5V_RUN
RIGHT SPEAKER LED
2 PCS LED
16 PIN FPC
5V_RUN
Keyboard LED
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LED BOARD
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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phast
1	EMI Modify Part of Bead		X00	44, 49	Modify Part of FL5, FL6, FL7, FL8 to BJ3216HS480NT.	X00	SSI
2	Modify Thermal sense Diode	To meet SMSC suggestion in Document AN1214.	X00	5, 6, 9, 32, 42, 49	Modify Q2, Q5, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q51, Q86, Q88, Q90, Q92, Q94, Q102, Q103, Q111, Q121, PQ37 to MMBT3904-7-F. (From MMST3904, also modify footprint)	X00	SSI
3	Modify ELC parts to NA.	To meet Dell circuit design requirment.	X00	36	1. Modify R637, R638, R639, R640, R641 to NA. 2. Modify Q50, R373, R372, R528, R529, C532, C542, C543, U118 to NA. 3. Modify U45 pin24, R635 pin2, R647 pin2 to +3.3V_ALW. 4. Modify U45 pin22 to LED_CLK, U45 pin23 to LED_DATA. 5. Add CN27 (4 pin debug header)	X00	SSI
4	Modify Footprint of Mini Card.	To separate Wini-lock& Connector	X00	30, 31	Del CN18(MiniCard WLAN Connector)& CN19(MiniCard WWAN, BT, UWB Connector)& CN20(Flash Cache Module Connector) Pin M3,M4,M5,M6.	X00	SSI
5	Move DP AUX pull-up& down resistor.	Modify by NV recommend.	X00	27	Move R191,R200 to CN10(DP conn) side.(NV recommend)	X00	SSI
6	Add LVDS DDC selection pull-up.	Add by NV recommend.	X00	26	Add R520 on U124 pin 1 and pull up to +3.3V_RUN	X00	SSI
7	Separte Head LED power	To meet Dell circuit design requirment.	X00	24	Modify CN62(CAM/ Head/ Logo Conn) pin11 to +5V_ALW& add C627 decoupling cap	X00	SSI
8	Fine tune MCP power trace.	To increase MCP power trace	X00	7, 9, 10, 13, 14, 15	1. Modify L1 pin1, L2 pin1, L3 pin2, L10 pin1 to +1.05V_VCCP. 2. DEL C427, C57, C62, C121, C122, C432, C174, C311, C217, C204, C214	X00	SSI
9	Modify ELC circuit design	To meet Dell circuit design requirment.	X00	36	1. Modify TP_LED_R_DRV#, TP_LED_G_DRV#, TP_LED_B_DRV# from U43 pin17, 18, 19 to U45 pin17, 18, 19. 2. Modify U51 pin 16 to +5V_ALW, U45 pin 1& 16 to +3.3V_ALW. 3. Modify U45 pin 22& 23 to LED_CLK& LED_DATA.	X00	SSI
10	Modify +1.5V_DDR power sequence	To meet NV power sequence recommend.	X00	46	1. Modify PR95& PR98 to connect "STBY". Also modify PR99 to "SHDN". 2. Modify PR100 to connect "+5V_ALW".	X00	SSI
11	Remove Hardware Total Power control	To solve CPU CLKSTP can't work issue.	X00	7	1. Remove R513 2. Add "H_CLKSTP" to connect MCP79& CPU directly.	X00	SSI
12	Modify Gating parts to NA.	Didn't use these Gating circuit but reserve all of these parts for MXM power gating.	X00	19, 21	Modify Q13, Q15, Q16, Q17, Q36, Q38, Q39, Q40, R189, R190, R248, R249, C310, C312, C313, C324, C326, C333, C334, C365, C366, C367, C368 and C369 to NA.	X00	SSI
13	Update all of connector lists	Update all of connector modification by M.E..	X00	24, 25, 29, 31, 35, 49	Modify footprint of CN7, CN8, CN14, CN16, CN17, CN23, CN52, CN57 and CN62.	X00	SSI
14	Add Moat capacity	Add Moat capacity by EMI request	X00	52	Add C761, C762& C763 Moat capacity by EMI request.	X00	SSI
15	Backlite final-tune.	Add reserve resistor for backlite final-tune.	X00	24	Add R520& R631 (0ohm_0603) for Backlite final-tune.	X00	SSI
16	WebCam DGND	WebCam DGND connect GND directly.	X00	24	Delete C673 to connect GND directly.	X00	SSI
17	Verify BIOS debug pin	Add test pad on Mini card pin 16, 17, 19.	X00	30	Add T29, T31, T32 on CN18 pin 16, 17, 19.	X00	SSI

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phast
18	Add 100pF cap near by SIM con.	Verify SIM card DATA& Reset lines.	X00	31	Add C628& C629 to NA and near by CN23.	X00	SSI
19	Connect +V_TV_DAC to GND	Follow NV design guideline	X00	11	Delete R452 and connect it directly to GND.	X00	SSI
20	Modify ELC circuit	To meet Dell circuit design requirment.	X00	36	U42 changes: 1. Change VBUS(pin 8) power to +5V_SUS 2. Change REGIN(pin 7), R632 and R636 pullup to +3.3V_F347. You could use the Q50 circuit for this. 3. Generate +3.3V_F347 from +3V_ALW and control the power state by SUS_ON and ACIN. We need this power to be ON during S0/S3/S4/S5 when on AC. On Battery this power is available only in S3. 4. Connect U40 power to +3.3V_F347 power. 5. Remove all the RGB_OVERRIDE# circuit. 6. Connect LID_SW# to U42 (similar to KB_DET#_R FET circuit) 7. Connect a new GPIO LOW_BATTERY from EC to U42 GPIO. U51: Remove I2C/SMBDAT2 MUX switch. Not required as per new requirement from AlienFX. U43: Change the power to this part to +3.3V_F347 U45 Changes: 1. Change the power to this part to +3.3V_F347 2. Change SCL and SDA connection to I2C_CLK_R, I2C_DAT_R. Change R264, R262, R596 power to +3.3V_F347. Add LID_SW# circuit.	X00	SSI
21	Modify ELC circuit	To meet Dell circuit design requirment.	X00	35	Add R655, Q116, Q117, Q118, Q119 for TP_LED_DRV disable.	X00	SSI
22	Add HDD Power Bulk Capacity	To meet Dell circuit design requirment.	X00	35	Add C630 for HDD 3V power Bulk cap	X00	SSI
23	Improve thermal trip sequence	EMC4002 thermal trip sequence	X00	32	Add C631 for EMC4002 thermal trip sequence.	X00	SSI
24	Add Jumper near by DC Jack	Add Jumper for EMI parts reserve	X00	49	Add PJP12& PJP17 for EMI parts reserve.	X00	SSI
25	Delete S5, S3 pull-high resistor.	Delete EC S5, S3 PH resistor by NV recommend.	X00	33	Delete R380& R383 by NV recommend	X00	SSI
26	Add +5V_SUS gating circuit.	Add +5V_SUS gating circuit for ELC circuit	X00	50	Add PQ11, PC194, PC195 for ELC circuit.	X00	SSI
27	Remove power source cap	Remove it due to space issue.	X00	44	Remove PC31 due to space issue.	X00	SSI
28	Add EMI's modification.	Add EMI's modification.	X00	44	Page11: 1. R75 change from 0ohm to 22ohm. 2. Add 22ohm resistor*4pcs to Net RGMII_TXD0 ,RGMII_TXD1, RGMII_TXD2,RGMII_TXD3(close to MCP79SLI). Page 14: 1. C177,C173 change from 10pf to 22pf 2. R126,R257 change 0ohm to 22ohm Page24: 1. Mount C568,C569. 2. Modify R415,R416 to L63, L64. 3. Add 0.1uf caps between +5V_RUN and Gnd(close to CN7) for 1 EA (C633) 4. Add 0.1uf caps between +GFX_PWR_SRC and Gnd (close to CN7) for 2 EA (C635, C636) Page28: 1. Mount L27, L28, L46 and leave R300, R301, R302, R304, R394, R395 empty 2. Mount ESD2,ESD3,ESD5. Page 35: 1. Mount CP1,CP2,CP3,CP4,CP5,CP6.	X00	SSI

2. Add 100pf caps*3pcs to Net RSPK_LED_B_DRV# ,RSPK_LED_G_DRV#, RSPK_LED_R_DRV# to GND (close to CN6). (C638, C639, C641)
Page 40: 1. Resved a Crystal 25MHz to Lan chip(close to U33) (Y3, C204, C214)
2. C136, C695 change from N/A to 22pf
3. R538, R541 change from 0ohm to 22ohm
4. Add 100pf caps* 3pcs to Net SPD10LDE, SPD100LED, PHY-ACTLED to GND. (C644, C645, C646)
5. Add 0.1uf caps between +3.3PHY and GND for 2 EA. (C764, C765)
Page44: Mount PC67, PC76, PC60, R61,PR155,PR156 also change to 0 ohm.
Page52: Add 0.1uf caps between 3.3V_RUN and GND for 9 EA. (C766, C767, C768, C769, C770, C771, C772 , C773, C774)

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Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phast
29	Modify 0603 resistor to JP	Mini-card power consumption more than R327 absorb.	X00	30	Delete R327 and Add JP4 to instead.	X00	SSI
30	Add 3 caps near by Vcore choke	To reduce AC droop	X00	44	Add PC155, PC161, PC163 parallel with PC78, PC65, PC61.	X00	SSI
31	Leave Power resisotr empty	Leave PR41 empty for line load modify	X00	44	Leave PR41 to empty.	X00	SSI
32	Add dampping resistor	Add dampping resistor by Ricoh recommend to final-tune media card signal.	X00	39	Add R504, R505, R534, R535, R638, R656, R657 ,R658 to final-tune Media card signal.	X00	SSI
33	Add PH resistor on display MUX	Add Pull-high resistor by TI recommend.	X00	39	Add R659, R155, R660, R56, R661, R662 pull-high resisotr by TI recommend.	X00	SSI
34	Add TPM circuit	Add TPM circuit by Dell requirement	X00	34	Add U145, R66, R69, R70, R72, R120, R415, RJ5, RJ6, C647, C648, C650, C650, C652, C653 for TPM circuit	X00	SSI
35	Change the MUX source for support Hybrid function	SN74LVC1G3157DCKR repair easier & lower cost than FUSB20.	X00	26	Change MUX source from FUSB20 (10pins) to SN74LVC1G3157DCKR(6pins). The SN74LVC1G3157DCKR amount need double. U120=> U120 & U132 (MXM/MCP LVDS DDC MUX) U121=> U121 & U134 (MXM/MCP VGA DDC MUX) U122=> U122 & U136 (MCP AUX/DDC MUX) U123=> U123 & U138 (MXM/MCP DP AUX MUX) U119=> U119 & U144 (MXM DP AUX/DDC MUX) U126=> U126 & U143 (MXM/MCP HDMI DDC MUX) U124=> U124 & U140 (MCP MEM& LVDS SMBus MUX)	X00	SSI
36	Add test-PAD	Add test-PAD for NV software debug.	X00	12	Add test-PAD on "PCI_REQ2, MXM1_PWR_EN, WLAN_RADIO_DIS#, WLAN_PCIE_RST#, WPAN_PCIE_RST#, WWAN_PCIE_RST#".	X00	SSI
37	Update EMI solution	Update EMI solution	X00	12	Page 29: Add 0.1uF cap between +5V_HDD& GND for 5 EA. (C660, C661, C662, C664, C667). Page 33: 1. R387 change from 0ohm to 22ohm 2. R396 change from N/A to 0ohm 3. C550 change from N/A to 10pf Page 41: Add 0.1uF between GND_LAN& GND and leave empty.	X00	SSI
38	Add Jumpper& Modify power plante	Add Jumpper& Modify power plante for MXM1 power measurement.	X00	19, 52	1. Add JP20& create +PWR_SRC_MXM1 power. 2. Modify power plante of C315, C316, C317, C318, C319, C320, C268, C270, C271, C447 to +PWR_SRC_MXM1.	X00	SSI
39	Add +5V_RUN_BLOGO power gating	Add +5V_RUN_BLOGO power gating by Dell ELC request.	X00	24	Add Q72, Q123, R96, R327 to gating +5V_RUN and create +5V_RUN_BLOGO power.	X00	SSI
40	Add stitch cap	Add stitch cap between +1.05V_VCCP& GND	X00	10	Add C121, C122 stitch cap fbetween +1.05V_VCCP and GND.	X00	SSI
41	Modify resistor value. (BOM)	Modify the value to meet PCI-E high swing function.	X01	20, 22	Modify R518& R600 to 0 ohm to meet PCI-E high swing function. (MXM card internal pull-high for 10Kohm)	X01	PT
42	eSATA re-drive IC setting	Add components for eSATA re-drive setting	X01	28	Add R663& R664 for eSATA future setting use	X01	PT
43	Revise EC control pin	Remove reserve circuit after double confirm with intel.	X01	5, 6	Page5: Remove R87, Page 6: Remove R689, R690, C798, Q120& Q121 to remove Quad core detect circuit. Page 33: Modify U15 pin 98 to "FUSB31_ON#"& pin 99 to "MXM2_PRESENT#".	X01	PT

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phast
44	Fine tune 1394 signal (BOM)	Fine tune 1394 signal	X01	39	Modify R465, R466, R467& R468 to 54.9ohm.	X01	PT
45	Add Mini-Card card detect resistor	Add pull-high restor for Mini-Card detect	X01	30, 31	Add R380, R383, R402, R416& R452 for Mini-card detect level.	X01	PT
46	Add CAM power control circuit	Driver of CAM can't shut power down	X01	24, 36	Page 24: Add Q73, C668, C311. Page 30: Add R687 pull-high resistor& U41 pin20 for "CAM_PWR_ON"	X01	PT
47	Modify Media Card signal dampping resistor. (BOM)	Modify Media Card signal dampping resistor for EMI signal fine-tune	X01	39	Modify R504, R505, R534, R535, R638, R656, R657, R658& R482 to 27ohm for EMI signal fine-tune.	X01	PT
48	Imporve X'tal timing. (BOM)	To improve X'tal timing by Vendor suggestion.	X01	14, 33, 34	Modify C185, C186, C551& C552 to 15pF and modify C597& C598 to 20pF	X01	PT
49	Fine tune MXM sequence (BOM)	Fine tune MXM power sequence for reliability	X01	32, 42	P32: Delete R223, R224, R530& R374 and Add R607, R608, R487, R488, C794& C795 then connect to "MXM1_35VOK" P42: Modify R567 to 20Kohm and add C775 to GND.	X01	PT
50	Fine tune Media Card signal	Fine tune Media Card signal for EMI& reliability	X01	39	Add R689, R690, R693& R694 (27ohm) for Media Card signal fine tune.	X01	PT
51	For "PE0_PRSNT16#" It need a SW control (MXM_ON#).	When "Hybrid" enabled and MXM_ON# assert to low, 2 of MXM cards PCIECLK will be active.(NV suggest)	X01	10	Stuff R78 and Unstuff R67& R424	X01	PT
52	For GPIO_47 it need to connect "MXM1_PRESENT#"	SBIOS used GPIO_47 to do a judgment whether MXM cards on board.(NV suggestion)	X01	10	Add R141	X01	PT
53	Unstuff DP HPD 100K pull low resistors.	MXM card has internal pull low.Follow MXM3.0 Design guideline.	X01	10, 27	Unstuff R503& R513	X01	PT
54	V_RGB_DAC can be shorted to GND if RGB interface is not used.	Follow MCP79 checklist v08	X01	11	Unstuff L6, C138& C139. Del C137 and Add R87	X01	PT
55	Follow MXM design guideline seqence	Follow MXM design guideline seqence.	X01	19, 21	Modify CN4& CN5 pin278, 280 to +3.3V_RUN. Change C327, C328, C329& C359 pin1 from +3.3V_MXM1(+3.3V_MXM2) to +3.3V_RUN. Modify CN4& CN5 pin1, 3, 5, 7, 9 to +5V_RUN. Change C829, C321, C322, C855, C325, C323, C830, C665, C654, C858, C666& C657 pin1 from +5V_MXM1(+5V_MXM2) to +5V_RUN. Add JP22 to connect +3.3V_MXM1& +3.3V_MXM2.	X01	PT
56	Fix MXM card leakage issue	Add gating circuit to fix leakage issue	X01	19, 20, 22	DEL +3.3V_RUN _HYBRID circuit.(R214,Q78,Q80,R402,C613,Q79,C614,C377) Change +3.3V_RUN _HYBRID power to +3.3V_MXM1(+3.3V_MXM2) . Stuff Q12, R185, Q14, R186, Q104, R500, Q105& R501 Unstuff R201, R582, R639& R640 Stuff Q81, R498, Q82, R499, Q20, R196, Q21& R197 Add D56& D57 Unstuff R641, R652, R653& R654	X01	PT
57	Reserve cap to fine tune sequence	Reserve cap to fine tune PWR_EN sequence	X01	20, 22	Reserve 0.1uf (Unstuff) C766& C777	X01	PT
58	Fix TMDS251 leakage issue	Plug external HDMI device will cause system leakage from TMDS251 vcc pin.	X01	19, 23	Add Q76,C377,C614,C613,C377 and Add net +3.3V_MXM1_HDMI.	X01	PT
59	Update EMI solution of X01 (BOM)	Update EMI solution of X01	X01	40	Modify R683, R684, R685, R686 to 22ohm.	X01	PT

Item	Fixed Issue	Reason for Change	Rev	PG#	Modify List	B Ver#	Phast
60	Let KBC can judge 2'nd MXM card plug in.	Connect MXM2_PRESENT2# to KBC.Let KBC can judge 2'nd MXM card plug in.	X01	33	MXM2_PRESENT2# connect to U15 pin 99.	X01	PT
61	Fix press 4 second shutdown leakage issue.	Crt_Ddc_Sel (GPIO36), Dp_Sel(GPIO4), Lvds_Sel(GPIO 20), Lvds_Ddc_Sel(GPIO 21), Lvds_Mem_Ddc_Sel (GPIO6), HDMI_DDC_Sel(GPIO5) active high after press 4 second shutdown then cause leakage to +3V_RUN.	X01	23, 26	Add pull high resistors & diodes. R695, R696, R697, R698, R699, D44, D47, D48, D54, D49& D55	X01	PT
62	Delay MXM1_35VOK sequence (BOM)	Delay MXM1_35VOK sequence to control MXM thermaltrip gating.	X01	42	Add C775 Change R567 to 20K	X01	PT
63	Delete HDMI pass resistor	Remove them to improve HDMI signal	X01	23	Remove R485, R486, R487, R488, R489, R490, R491, R492, R493, R607& R608.	X01	PT
64	Add cap near by Media card controller	Add cap to improve Media card signal	X01	39	Add C217, C778, C779, C780, C781, C782, C785, C786, C787, C788, C789, C790, C791& C792	X01	PT
65	Meet SMSC EMC4002 circuit design (BOM)	Add circuit to meet SMSC suggest, also keep Dell request.	X01	32, 47	Modify R218 to 4.7K ohm and pull-high power to +3.3V_SUS Add Q78, Q79, R224& R490.	X01	PT
66	Add Dampping resistor	Add 22 ohm resistor to improve CRT signal	X01	25	Add R374& R485	X01	PT
67	Fix Keyboard LED wrong color	In order to correct keyboard LED display	X01	37	Swap CN57 pin 3, 4 pin define from R to G& G to R.	X01	PT
68	Follow NV designguide (BOM)	Modify schematic to meet NV design guideline	X01	9, 10, 11, 13, 14, 15	Modify C115, C123, C131, C161, C164, C191, C196& C198 to 2.2uF. Unstuff R100 Modify R145, R146, R211& R244 to 2.2Kohm. Modify C116 to 2.2uF. Add C65, C174& C793	X01	PT
69	Update EMI solution of X01	Update EMI solution of X01	X01	11, 19, 24, 28, 32, 35, 39, 40, 47, 49, 52	Unstuff R82, R469, R470, R471, R474, R541& C136 Stuff C204, C214, C835, C836, C837, C838, L39, L40& Y3. Add C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C824, C825, C864, C865, C866, C867, C869, C870, C871, C872, C873, C874, C878, C879, C880, C887, C888, C889, C890, C891, C892, C893. Move C677, C678, C679, C680, C681, C682, C683& C684 to near by CN63. Delete R549 and Add C894.	X01	PT
71	Power VDS derating modify	To meet Power VDS derating specification	X01	45, 46, 47	Stuff PR65, PR96, PR119, PR122& PC90. Stuff PC118, PC136& PC137 and modify them to 1000pF	X01	PT
72	Improve AC-in Detect function	Due to MXM had internal pull-hign at AC-in signal cause AC-in detection fail	X01	19	Add R491& Q120 and R502 to 100Kohm	X01	PT
73	Update eSATA re-drive& FSUSB31K8X IC setting (BOM)	Due to eSATA re-drive IC set to increase signal stress cause signal failure and FSUSB31K8X setting.	X01	28	Stuff R663& R664 and Unstuff R618& R619 for eSATA re-drive IC. Stuff R489 for FSUSB31K8X.	X01	PT
74	Reserve SIM card connector and stuff components to test FCM mini card connector (BOM)	In order to prepare reserve CN19 so stuff all of components for FCM and reserve SIM card connector	X01	31	Unstuff CN23, C523, C524, C525, C526, C527& ESD4. Stuff R333, R334, R335, R336, R337 R338, R339, R349, R351, R353& R355.	X01	PT

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75	Fine tune PCI clock (BOM)	Due to PCI clock fail of EA test report.	X01	12	Stuff C151 and modify to 15pF	X01	PT
76	Reserve unused MXM2 power sequence control circuit (BOM)	Reserve unused MXM2 power sequence control circuit	X01	42	Unstuff C724, C725, C726, C728, D45, D46, R611, R612, R613, R642, R643, R644, R645, Q100, Q101, Q102& Q103.	X01	PT
77	CRT signal improvement (BOM)	To improve CRT signal	X01	25	Modify L56, L57& L58 to BLM18BB750SN1D	X01	PT
78	Turn off SUS power in DC mode	Turn off SUS power in DC mode to prevent leackage current	X01	32, 33, 42	Modify R205 pin 1 to +3.3V_SUS. Add R492 and unstuff. Modify U15 pin 85 to "RUNPWROK#" and delete R590& Q77.	X01	PT
79	MCP79 Vcore table modify	To meet NV MCP79 designguide - DG-03328-001_v12	X01	45	Modify PR83 to 200Kohm_F. Also modify MCP79 Vcore table.	X01	PT
80	DP HPD floating (BOM)	R513 avoid DP HPD floating	X02	27	Mount R513	X02	ST
81	DP power drop too big (BOM also)	Avoid DP power drop cause by D17.	X02	27	Add R549 (0ohm_0603) and leave D17 NC.	X02	ST
82	DP leackage current issue (BOM)	Avoid DP leackage current	X02	27	Modify D33 from BAV99-7-F to RB500V-40.	X02	ST
83	HDMI TV leackage issue	Fix HDMI TV plug -in leackage from TMDS251 to system.	X02	19	Add Q77 (2N7002) for dis-charge.	X02	ST
84	Meet new inductor's droop voltage (BOM)	Meet new inductor's droop voltage	X02	44	Modify PL2, PL3, PL4 to ETQP4LR36WFC. Modify PR40& PR59 to 5.63Kohm & 316Kohm.	X02	ST
85	Media Board sometimes fail (BOM)	Improve SM bus fan-out ability for Media baord	X02	22, 33	Modify R196, R197, R273, R274 to 13Kohm	X02	ST
86	EMI solution in ST phase - 1. (BOM)	Add EMI solution	X02	28, 41	Add EMI2& EMI3. Mounted L32, L42, L43& L45 and remove R366, R371, R375, R381, R382, R411, R412& R414 by BOM change.	X02	ST
87	AMD MXM leackage current issue	Avoid AMD MXM leackage current	X02	20, 22	Add D60& D61 and Delete R640& R652.	X02	ST
88	SM bus equivalent parallel resistance low (BOM)	SM bus equivalent parallel resistance too low so increase the value of resistor	X02	23, 26	Modify R494, R495, R496, R497, R601& R604 to 10Kohm in page 23. Modify R147, R155, R156, R609, R610, R627, R659, R660, R661& R662 to 10Kohm in page 26.	X02	ST
89	eSATA output driving strength (BOM)	Improve eSATA output driving strength	X02	28	R618, R619 Mount and R663, R664 NA.	X02	ST
90	Fine tune +3.3V_MXM1 power sequence (BOM)	Fine tune +3.3V_MXM1 power sequence to close 3V of MXM card's power sequence	X02	28	C310,C312,C614 change to NA	X02	ST
91	Fine tune MXM card power enable sequence (BOM)	Fine tune MXM card power enable sequence make sure +3.3V_MXM1 power sequence to close 3V of MXM card's power sequence	X02	20, 22	R192,R256 change to 10Kohm C776,C777 Mount.	X02	ST
92	Follow TI vendor suggestion	To make sure the TMDS 251 power stable	X02	23	Add 10UF on +3.3V_MXM1_HDMI	X02	ST
93	Reserve unused power (Audio board)	Reserve unused power for Media card of Audio board	X02	39	Add 0ohm and leave empty.	X02	ST

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94	Fine tune +3.3V_MXM1& +5V_MXM1 power sequence (BOM)	Fine tune +3.3V_MXM1& +5V_MXM1 power sequence .	X02	19	Stuff R176& Unstuff R486	X02	ST
95	USB waveform fail	Improve USB waveform	X02	28	Stuff R394, R395& Unstuff L46, ESD5	X02	ST
96	VGA ACAVIN control (BOM)	Add VGA ACAVIN	X02	19	Add Q80 and connect to ADAPT_TRIP_SET. Modify R502 to 4.7Kohm.	X02	ST
97	3.3V OCP keeping re-try (BOM)	Make sure signal won't floating and keep original request	X02	47	Modify PR135 to 20K Add R590	X02	ST
98	EMI solution in ST phase - 2. (BOM)	Add EMI solution	X02	39	C792 change from 10pf to 15pf R482 change from 27ohm to 0ohm	X02	ST
99	Media Card signal waveform improve	Media Card signal waveform improve	X02	39	R118, R504, R505, R534, R535, R638, R656, R657, R658, R689, R690, R693& R694 change from 27ohm to 33ohm Unmoute C217, C778, C779, C780, C781, C782, C785, C786, C787, C788, C789, C790, C791& C792.	X02	ST
100	1.5V power regulator level modify (BOM)	Modify 1.5V power regulator level	A00	46	Modify PR221 to 80.6Kohm	A00	MP
101	Fix 1.5V power non-modification (BOM)	Fix 1.5V power non-modification	A00	46	PR214& PR221 un-stuff	A00	MP
102	Fine tune +3.3V_MXM1& +5V_MXM1 power sequence (BOM)	Fine tune +3.3V_MXM1& +5V_MXM1 power sequence .	A00	19	Unstuff R176& stuff R486	A00	MP
103	Fine tune MXM card power enable sequence (BOM)	Fine tune MXM card power enable sequence make sure +3.3V_MXM1 power sequence to close 3V of MXM card's power sequence	A00	20, 22	R192,R256 change to 0ohm C776,C777 Unstuff.	A00	MP
104	Modify Display Port HPD vlotage sense.	Modify Display Port HPD vlotage sense to meet NV checklist	A00	27	Modify R65 to 1Kohm	A00	MP