H61MX

Fab A

Micro ATX 9.6X8.0

CPU:

Intel Sandy Bridge processors in LGA1155 Package

System Chipset:

PCH

Main Memory:

Dual Channel / DDR-III * 2 (Max 8GB)

On Board Device:

PCI Bridge :IT8893E/BX

SIO:IT8728F/CX

LAN:RealTek RTL8111E-VB-GR

HDA Codec:ALC888/ALC662

BIOS:SPI Flash ROM 4M

Expansion Slots:

PCI EXPRESS 16X SLOT *1
PCI EXPRESS 1X SLOT * 1
PCI SLOT * 2

Version	Function	SKU	BOM
Fab.A			

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FOXCONN PCEG

Title: Cover Sheet

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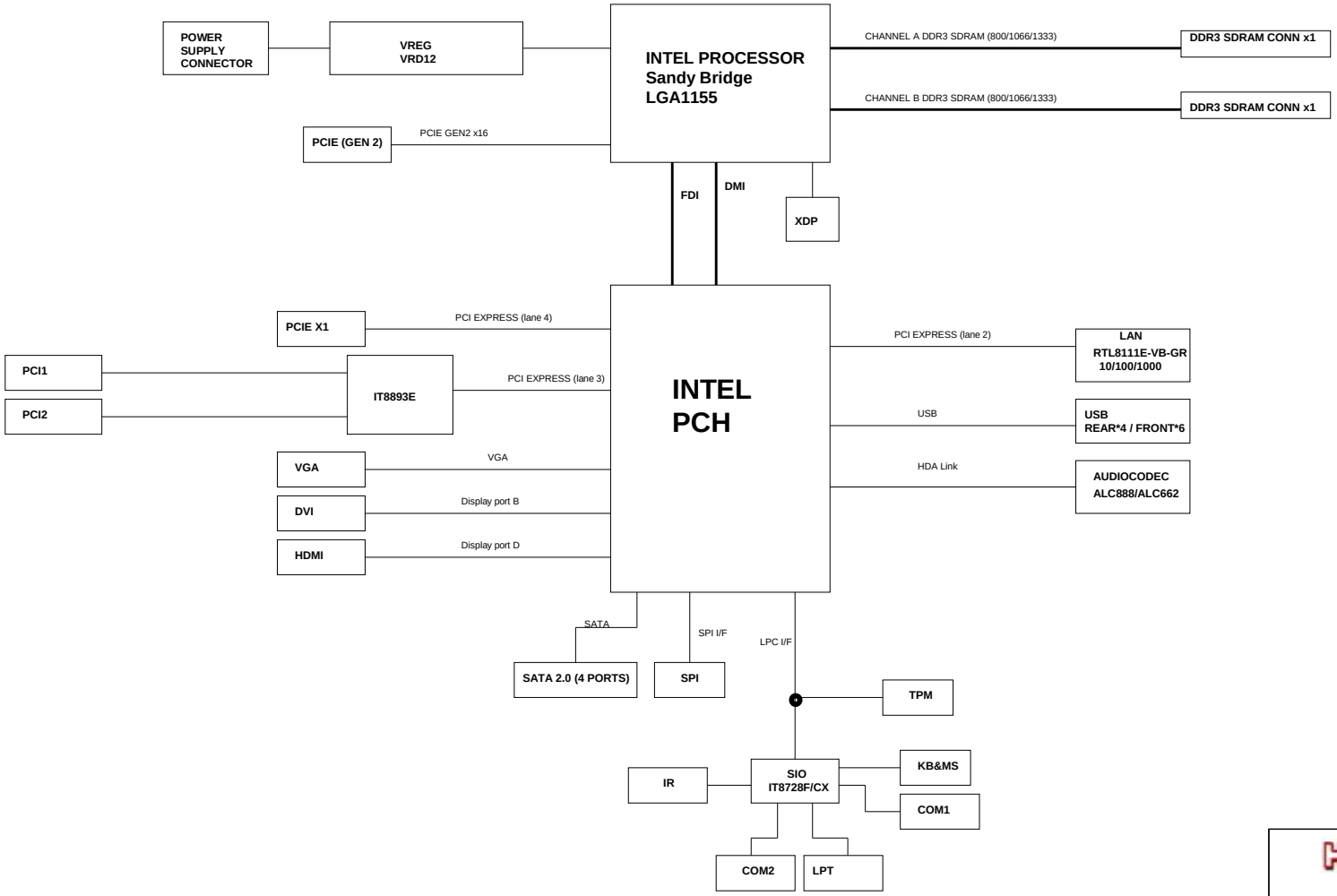
BLOCK DIAGRAM



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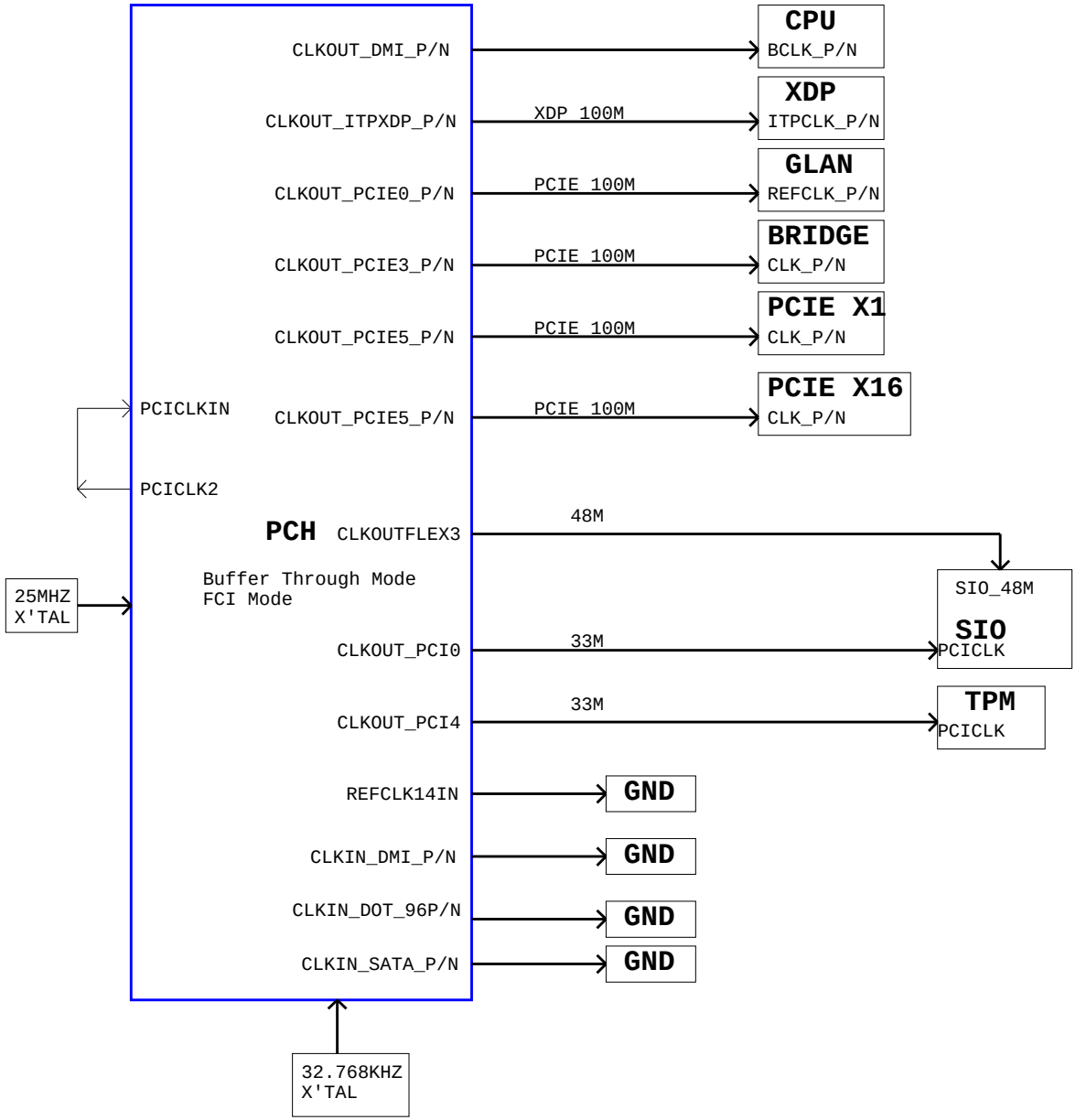
CLOCK DISTRIBUTION



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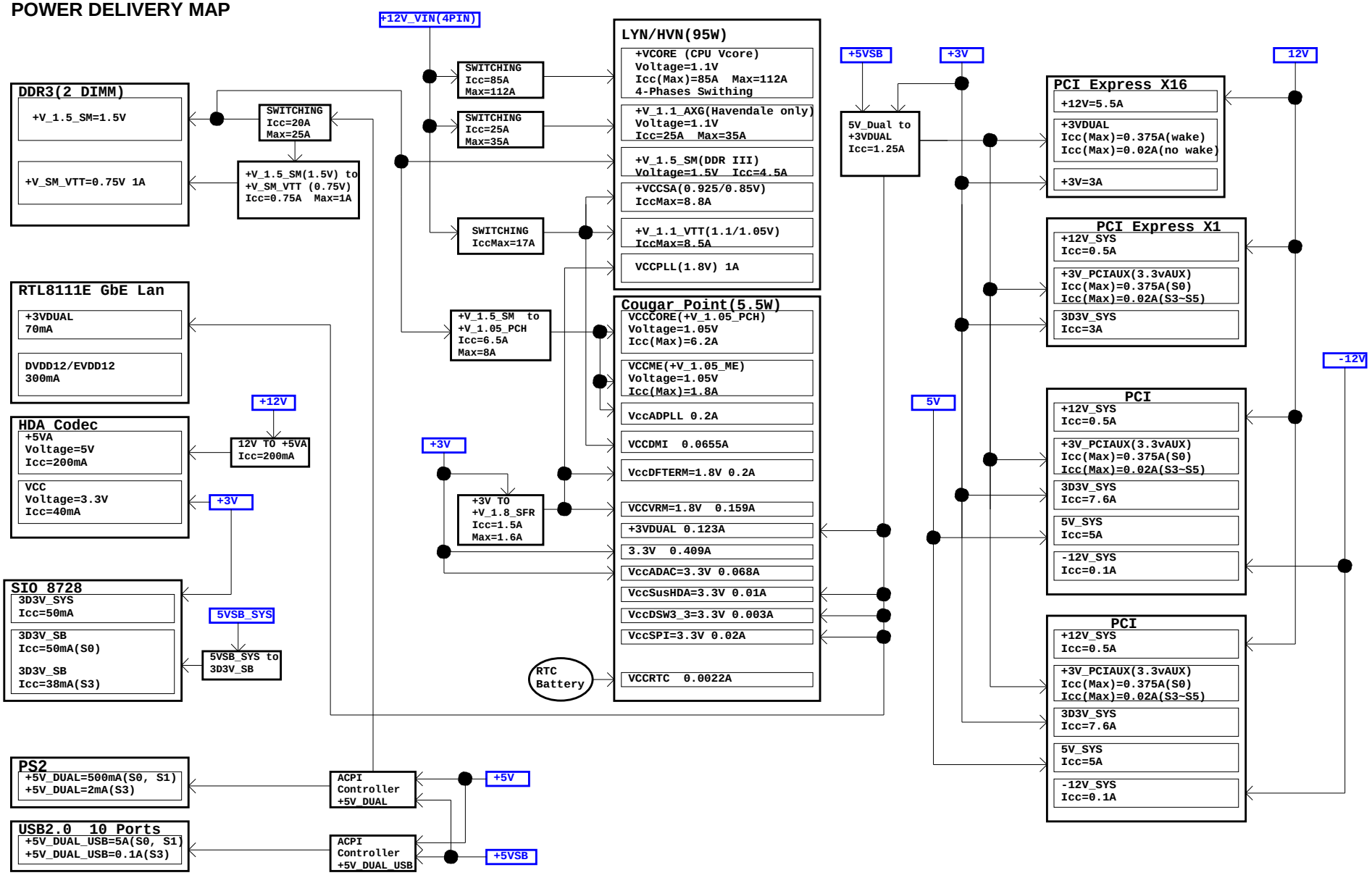
POWER DELIVERY MAP



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POWER ON SEQUENCE

G3 w/RTC Loss to S4/S5 (Without Deep S4/S5 Support) Timing Diagram

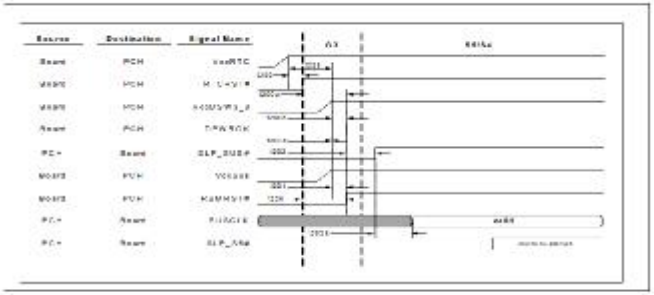


Figure 8-4. S3/M3 to S0 Timing Diagram

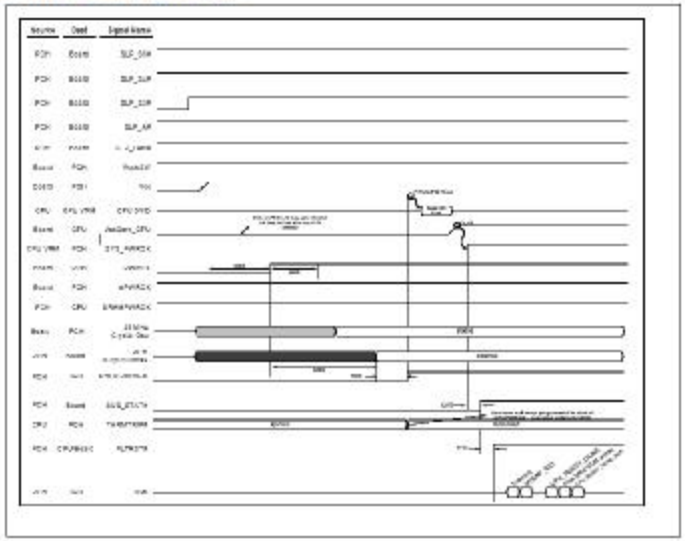


Figure 8-8. DRAMPWROK Timing Diagram

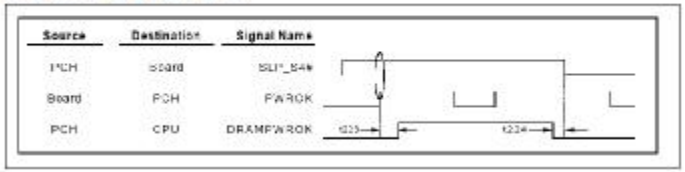


Figure 8-3. S5 to S0 Timing Diagram

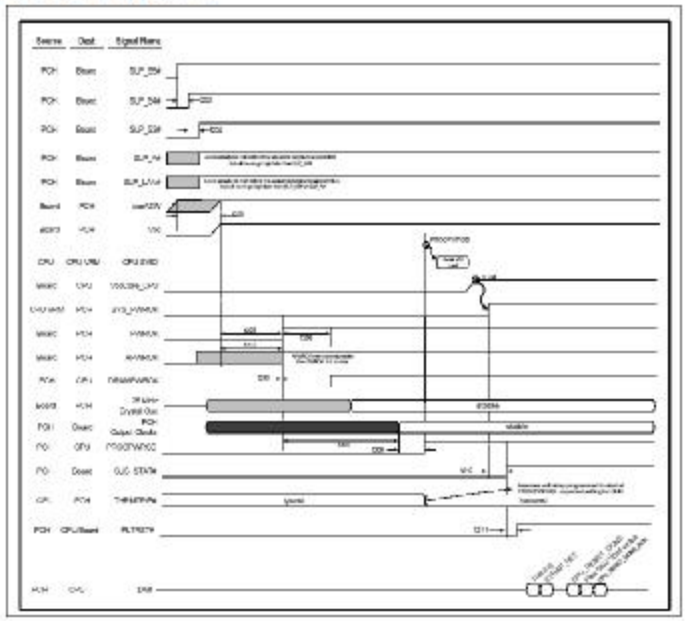
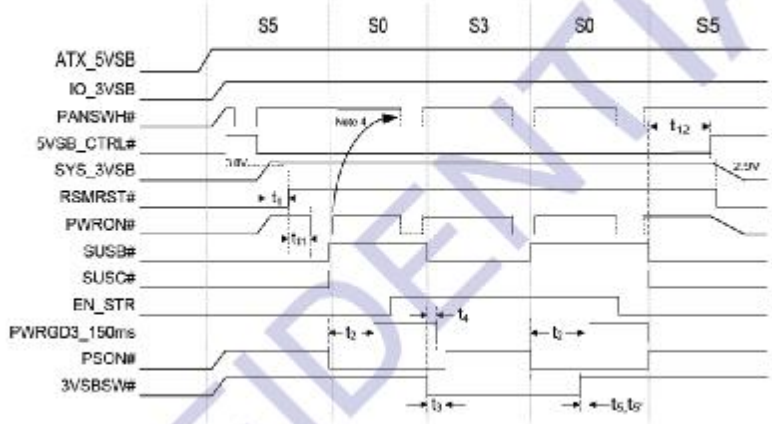


Figure 11-16. EuP Function Signal Timings



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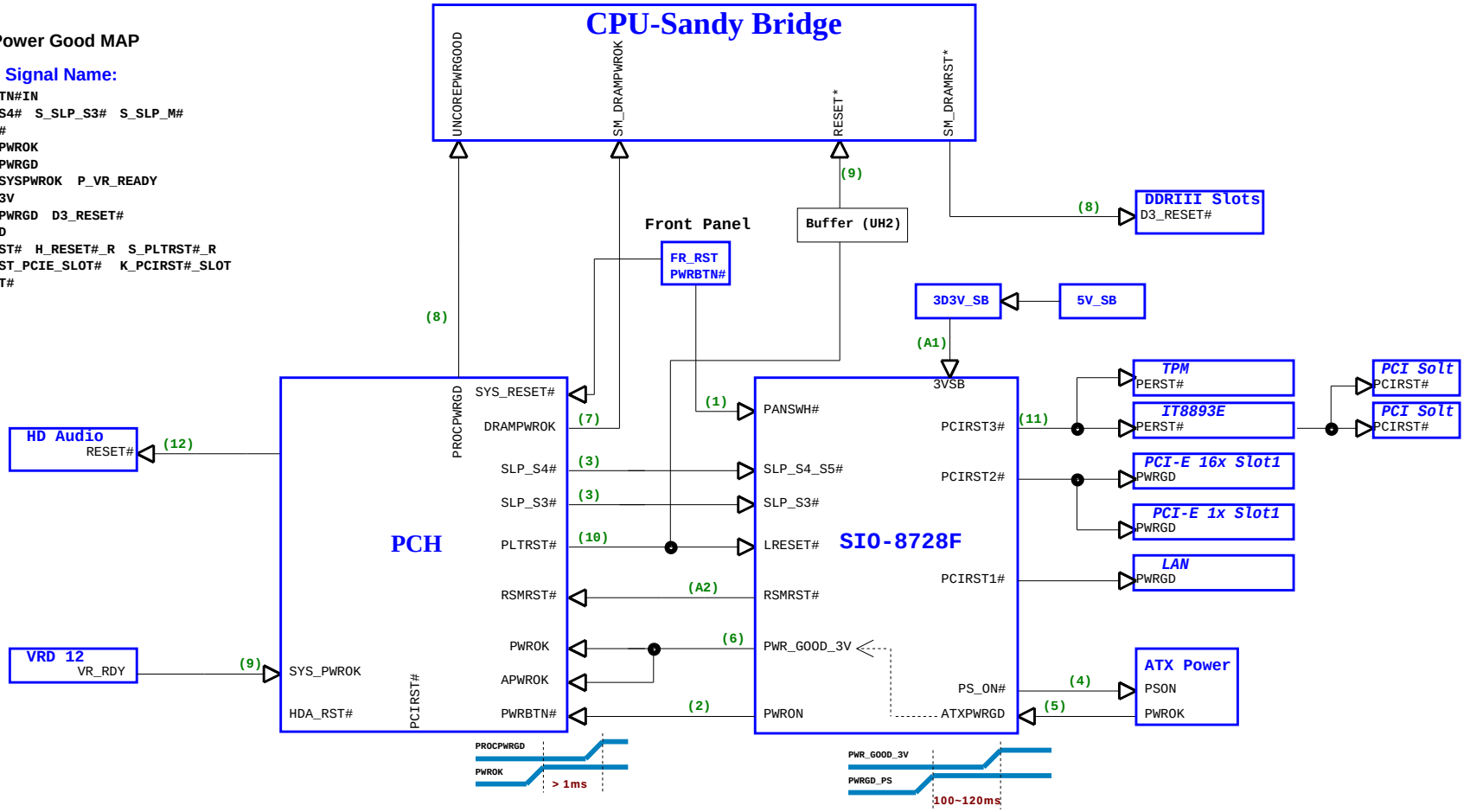
RESET / Power Good MAP

Sequence Signal Name:

(1) O_PWRBTN#IN
(2) S_SLP_S4# S_SLP_S3# S_SLP_M#
(3) O_PSON#
(4) B_ATX_PWROK
(5) PCH_MEPWRGD
(6) S_PCH_SYSPWROK P_VR_READY
(7) PWRGD_3V
(8) H_DRAMPWRGD D3_RESET#
(9) H_PWRGD
(10) S_PLTRST# H_RESET#_R S_PLTRST#_R
(11) X_PLTRST_PCIE_SLOT# K_PCIRST#_SLOT
(12) A_Z_RST#



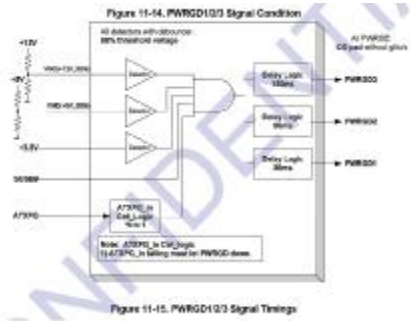


Figure 11-14. PWRGD1/2/3 Signal Condition

Figure 11-15. PWRGD1/2/3 Signal Timings

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IRQ Routing Table

	INTA#	INTB#	INTC#	INTD#	IDSEL	REQn#	GNTn#
Slot1	A	B	C	D	16	0	0

	INTA#	INTB#	INTC#	INTD#	IDSEL	REQn#	GNTn#
Slot2	B	C	D	A	17	2	2

STRAPPING Table

CPU side

CFG[17:0]	Description	
[2]	PCI Express static x16 lane numbering reversal	1: normal Default 0: lane numbers reversed
[6:5]	PCI Express Bifurcation	00: 1x8, 2x4 PCI Express 01: reserved 10: 2x8 PCI Express 11: 1x16 PCI Express Default

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Title: STRAP

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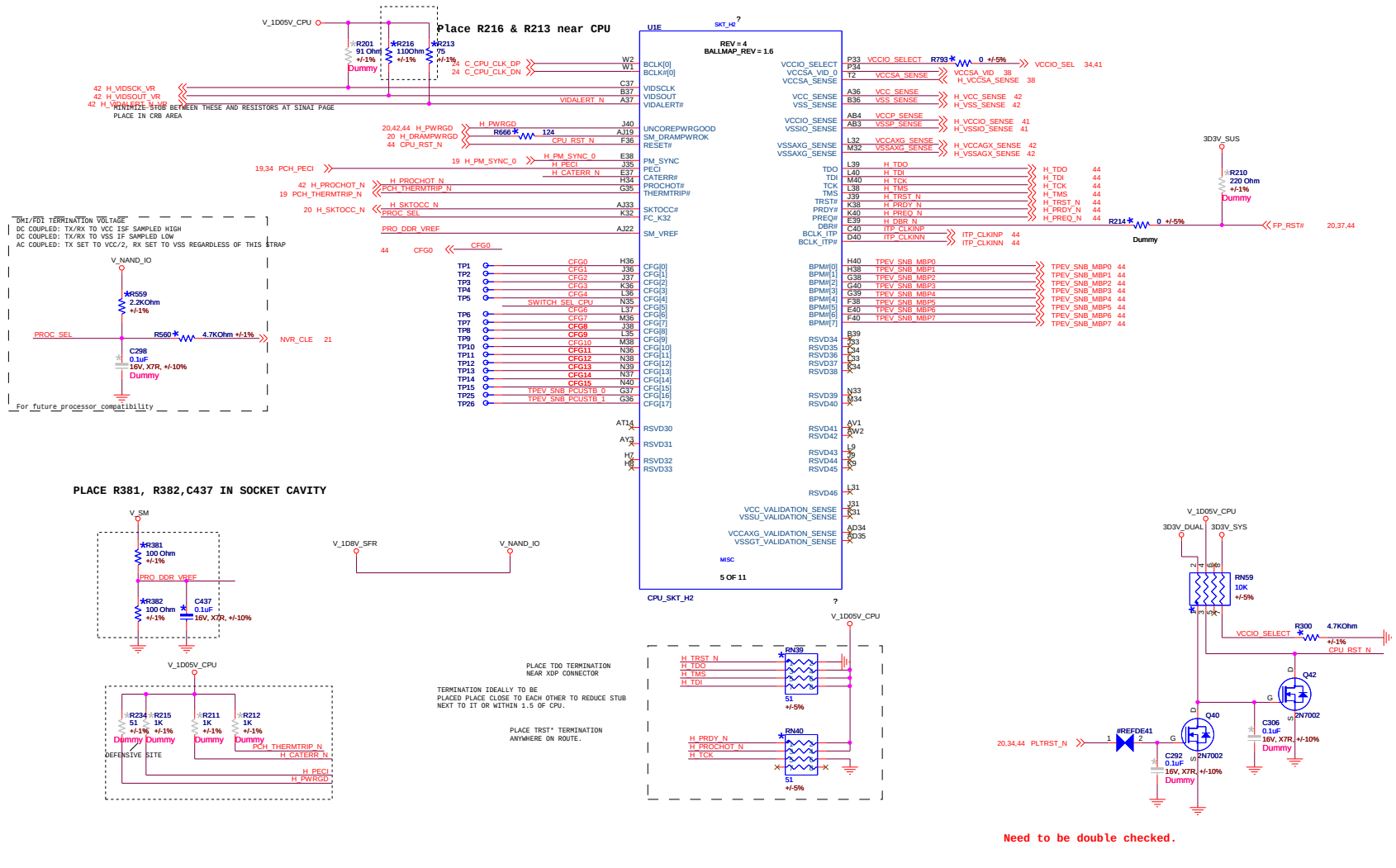

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Title: CPU1-MSIC

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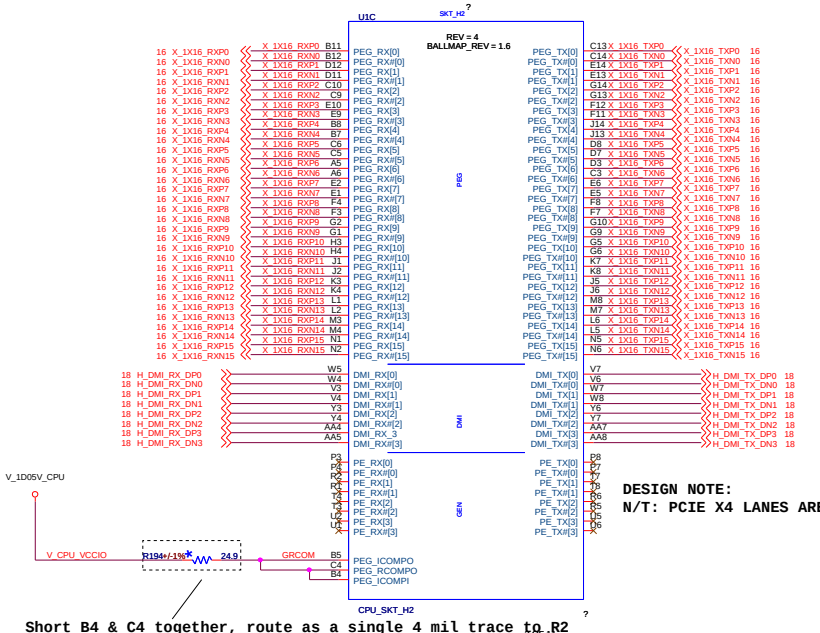
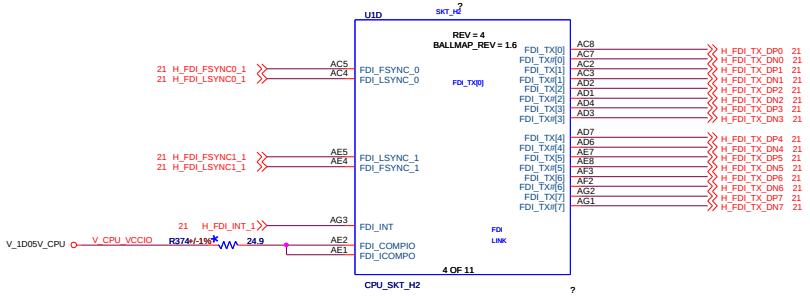
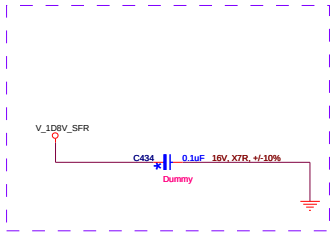


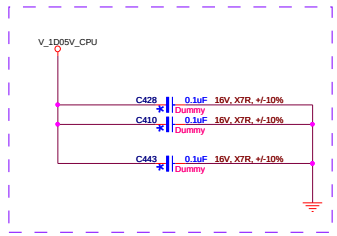


DESIGN NOTE:
N/T: PCIE X4 LANES ARE NOT SUPPORTED ON DESKTOP CPU SKUS

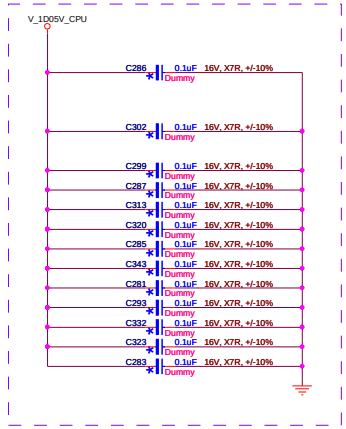
Short B4 & C4 together, route as a single 4 mil trace to R2
Route B5 to R2 as a aeperate 10 mil trace



Stiching CAP for FDI



Stiching CAP for DMI



Stiching CAP for PEG

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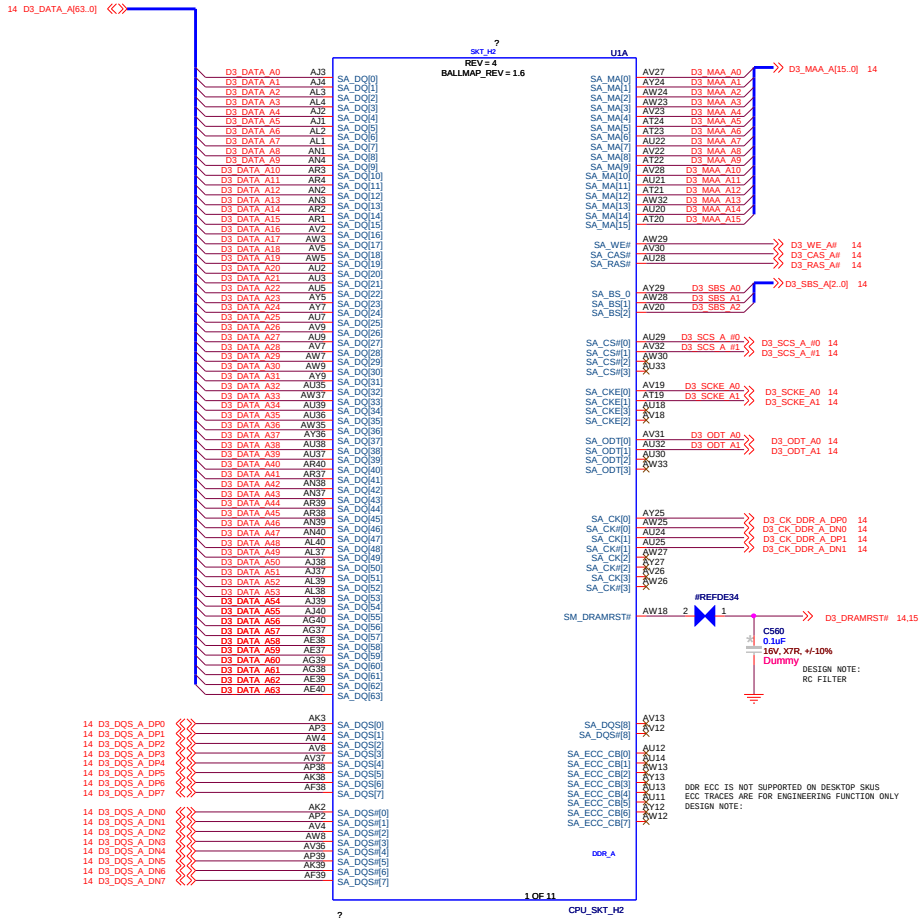

FOXCONN PCEG

Title	CPU3-DDR3_CHA		
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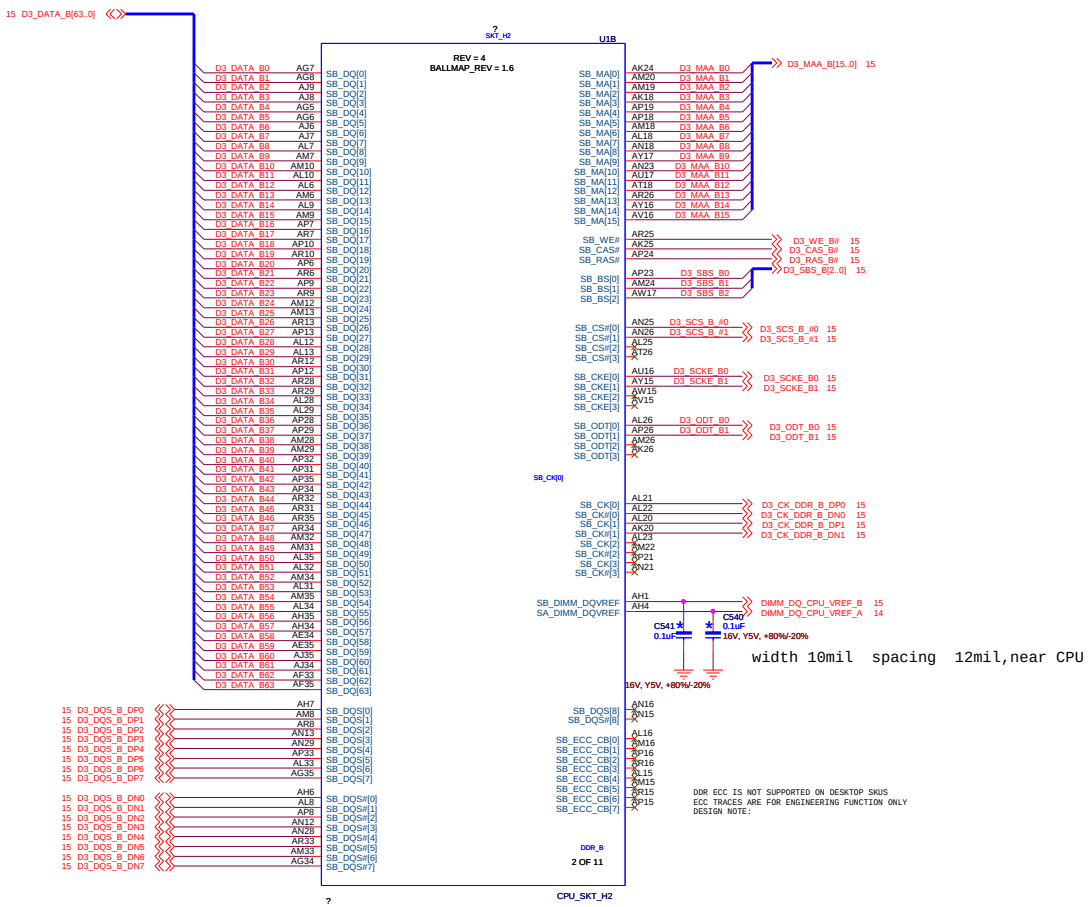

FOXCONN PCEG

Title: CPU4-DDR3_CHB

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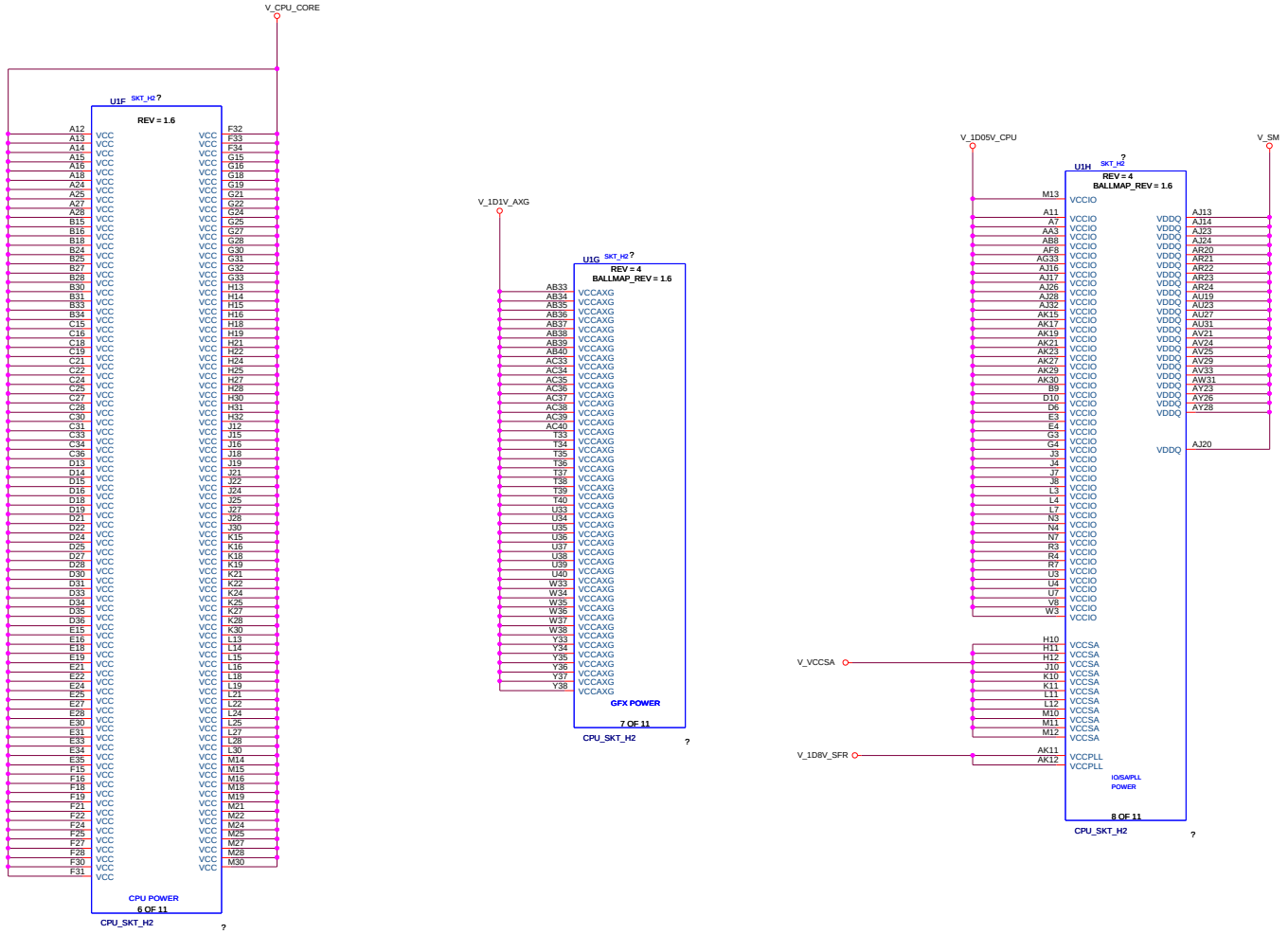

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Title	CPU5-POWER	
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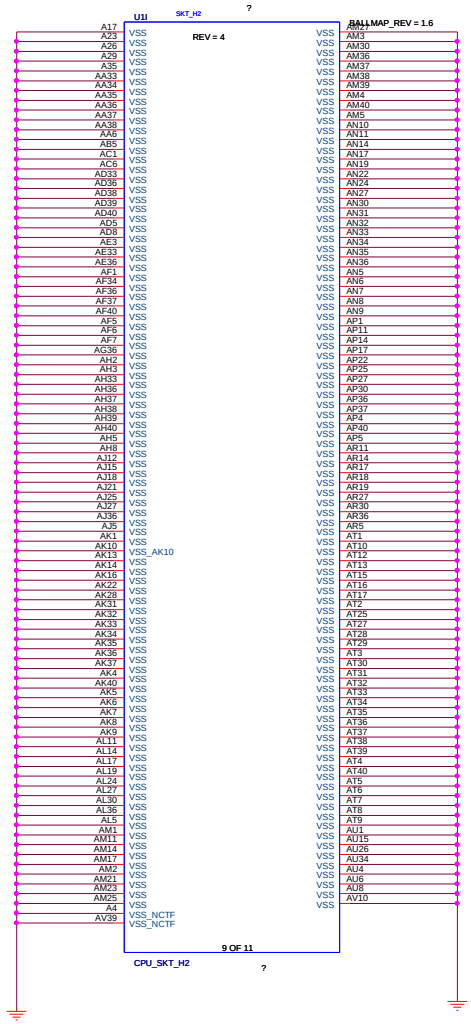

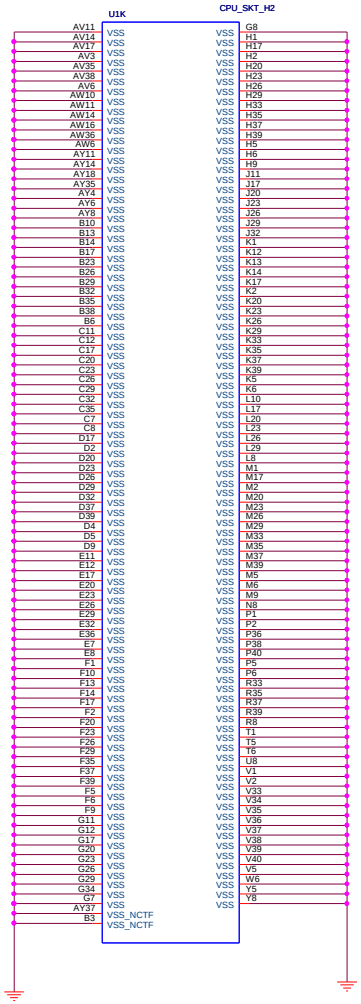

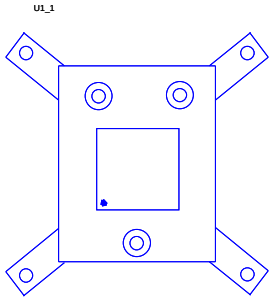

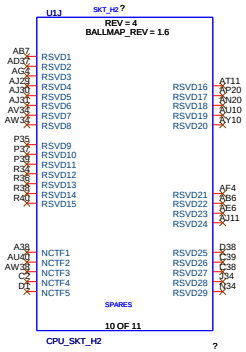

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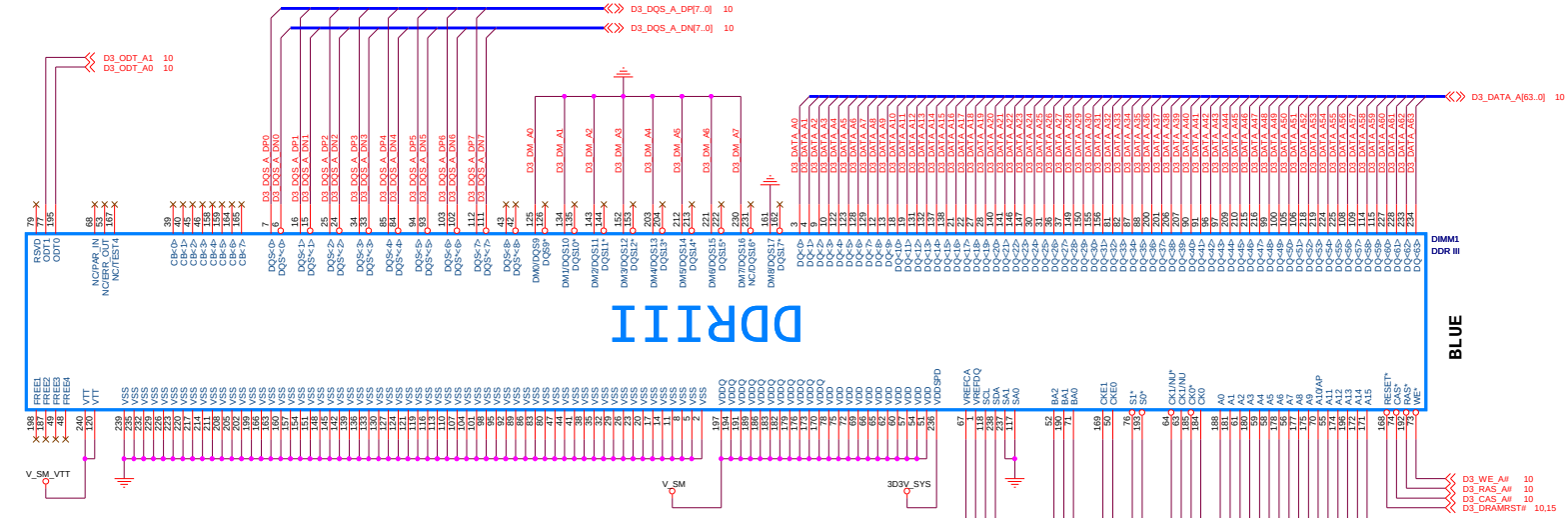
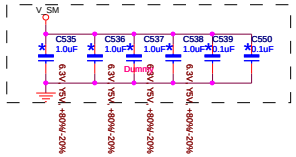
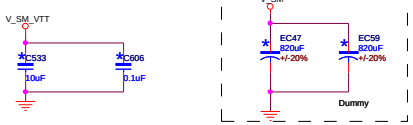
CHANNEL A DIMM 1
SMB ADDRESS:000

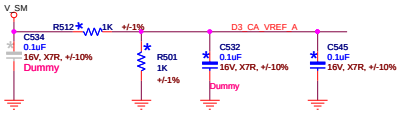


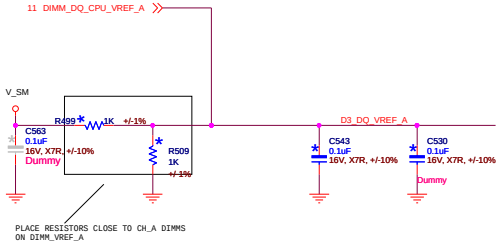
CLOSE TO DIMM POWER PIN



PLACE BETWEEN DIMM1 AND CPU







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Title	DDR3-1:CHA		
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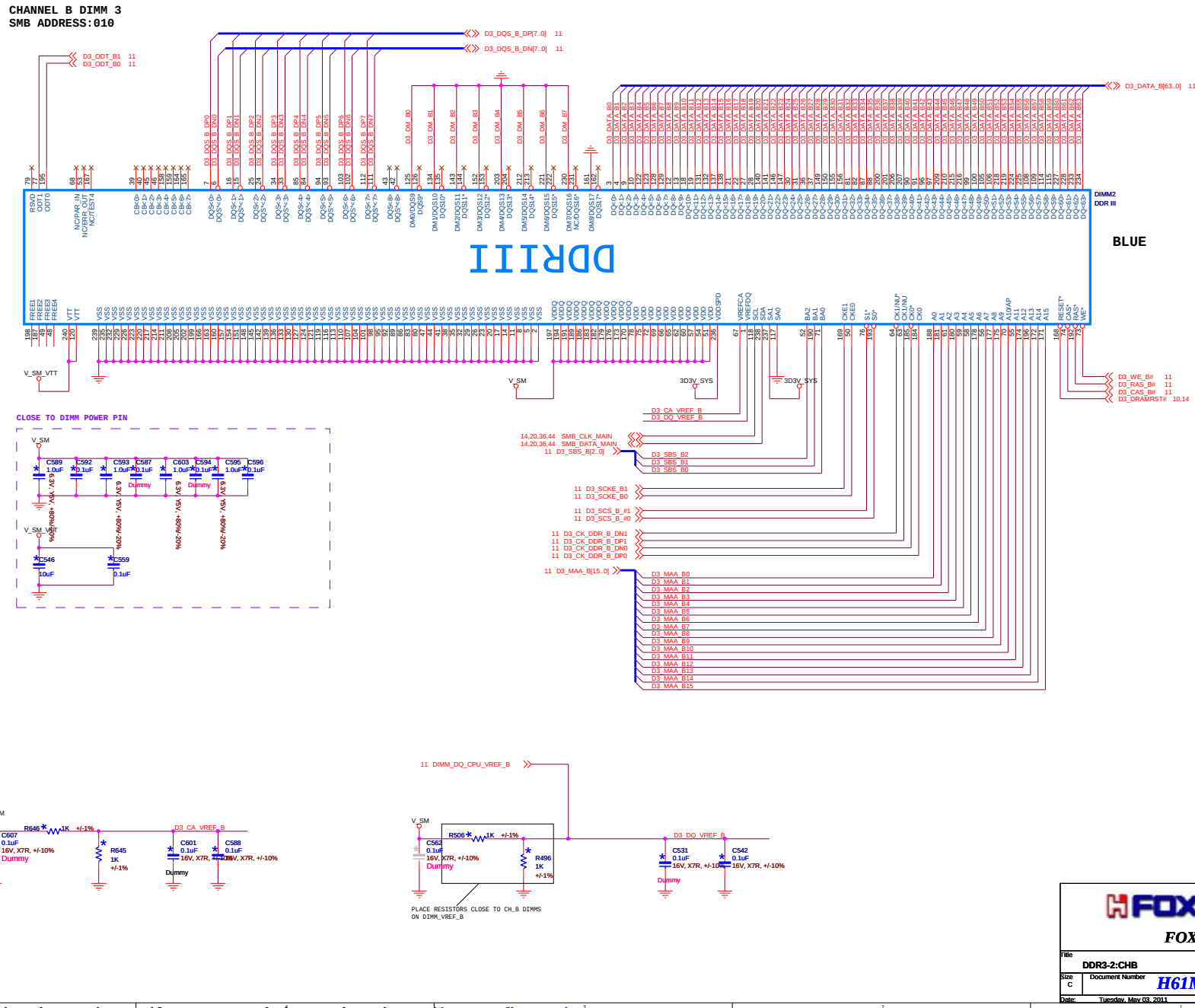

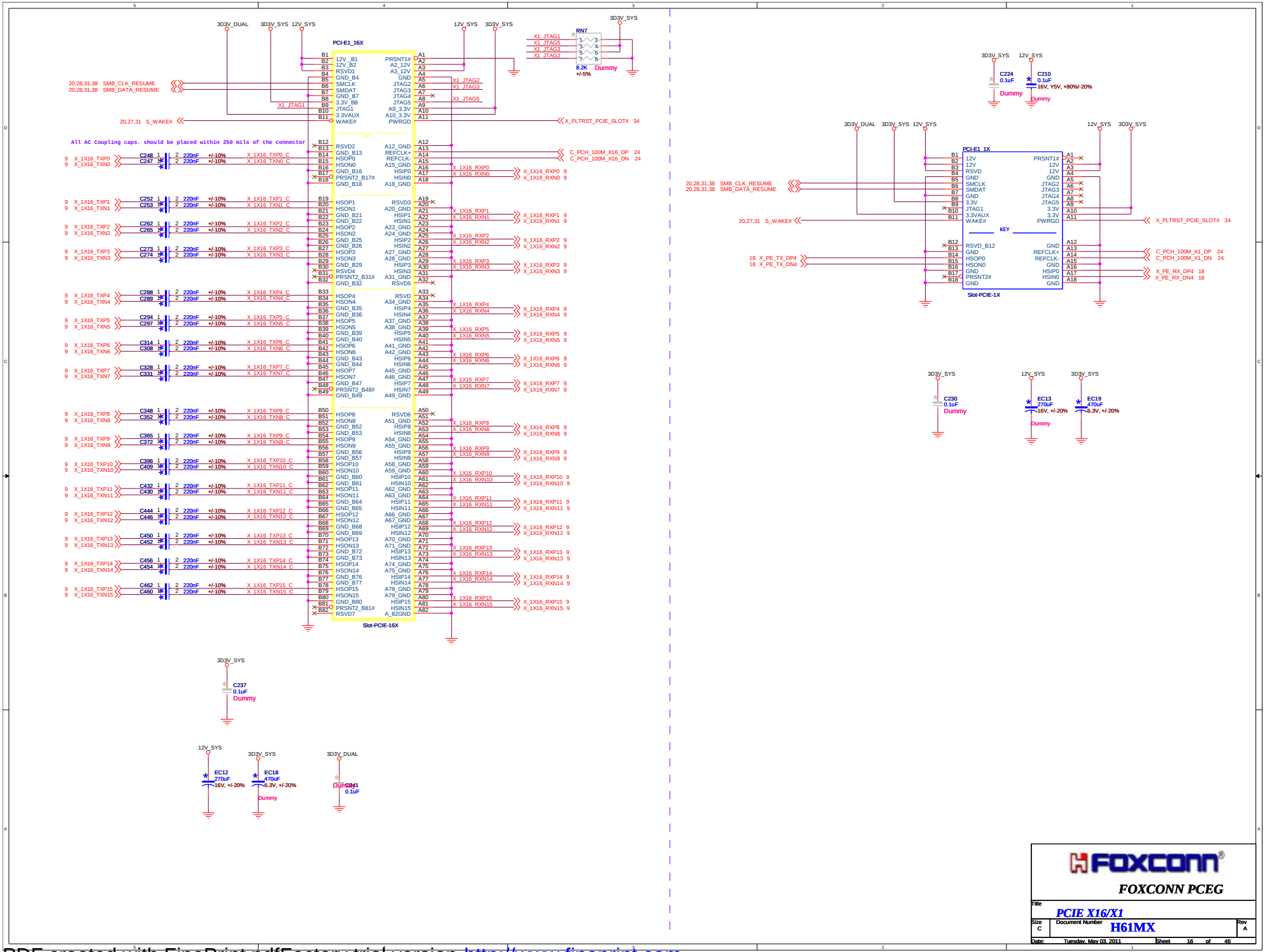

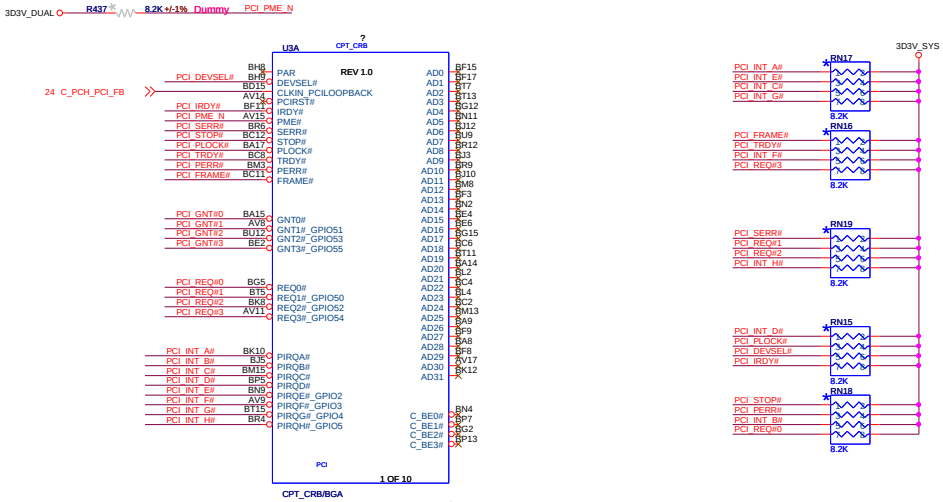

STRAP: Boot BIOSselect

check whether GNT1 or SATA1GP(GPIO19)

BOOT DEVICE	GNT1	SATA1GP
LPC	0	0
NAND	0	1
PCI	1	0
SPI	1	1

PCI_GNT#0 R445 * 1K Dummy

PCI_GNT#1 R438 * 1K Dummy

Internal pull-up

PCI_GNT#3 R446 * 1K Dummy

PCI_GNT#2 R454 * 1K Dummy

DG 0.7
GNT3 is top block swap mode:
connect to ground with 4.7k ohm weak
pull down resistor for top block swap mode

GNT2#/GPIO53:ESI strap for server platform
ONLY,Do not pull low.

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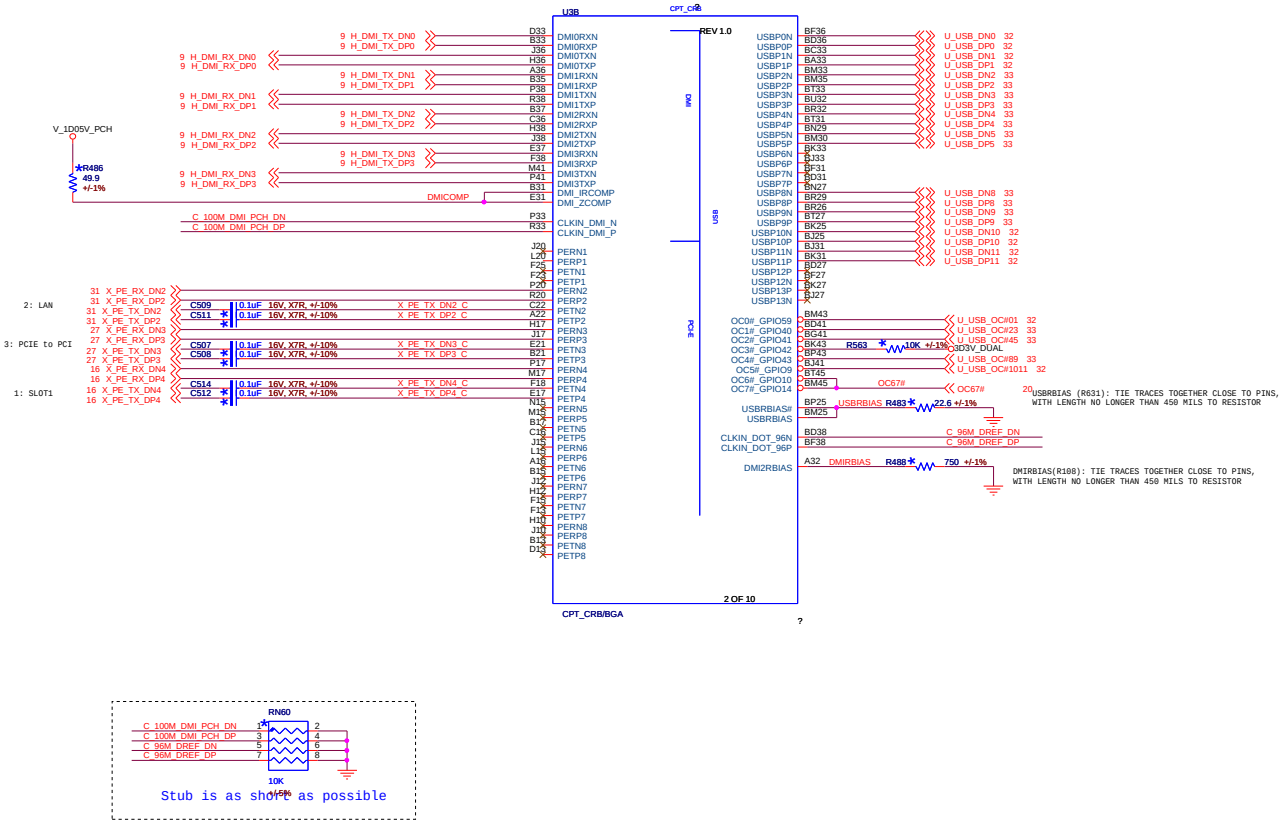

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Title	PCH2-DMI/PCIE/USB	
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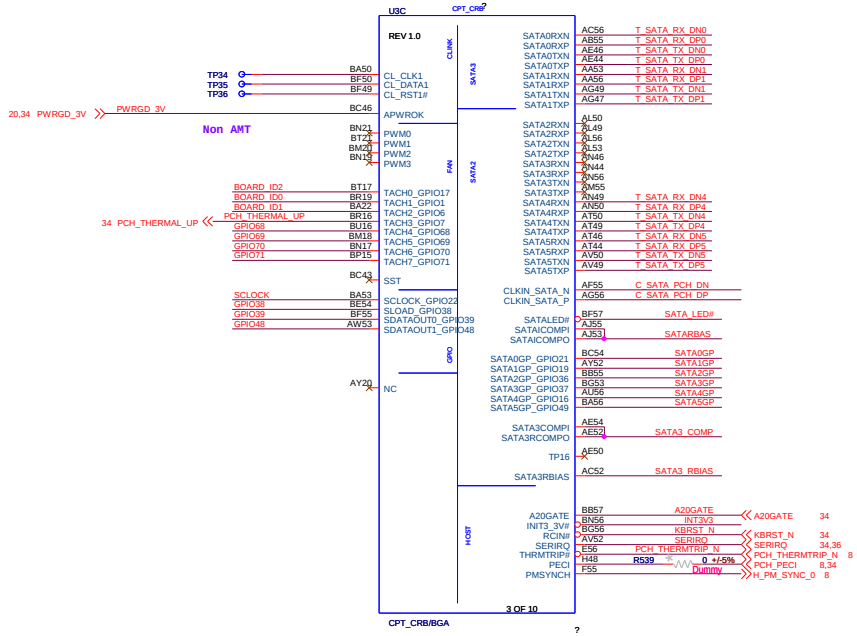
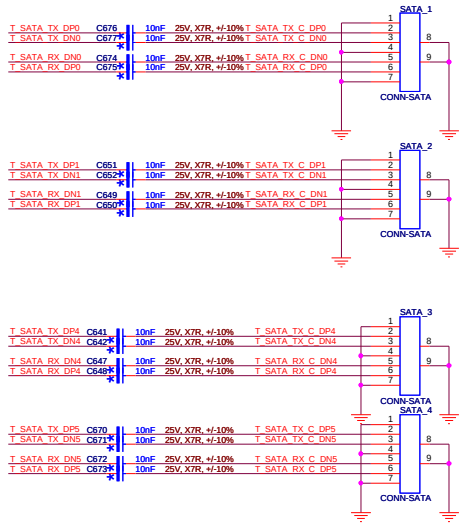
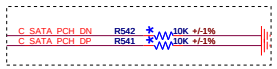
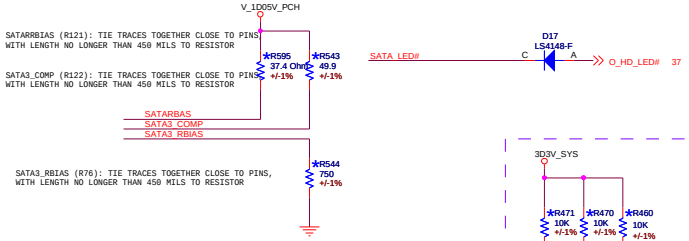
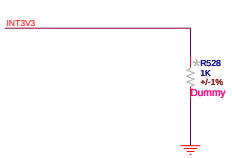


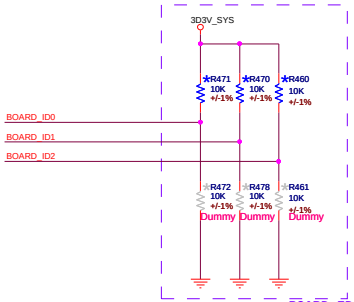




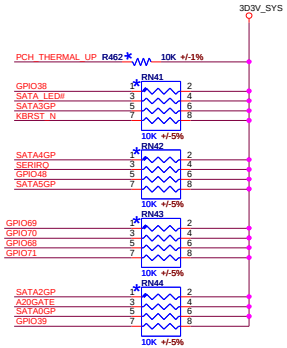
Resistor can change RN

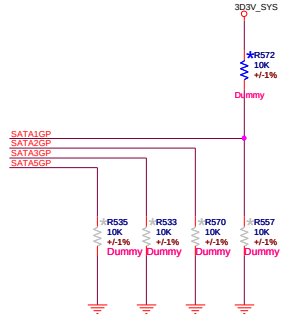






Need double check





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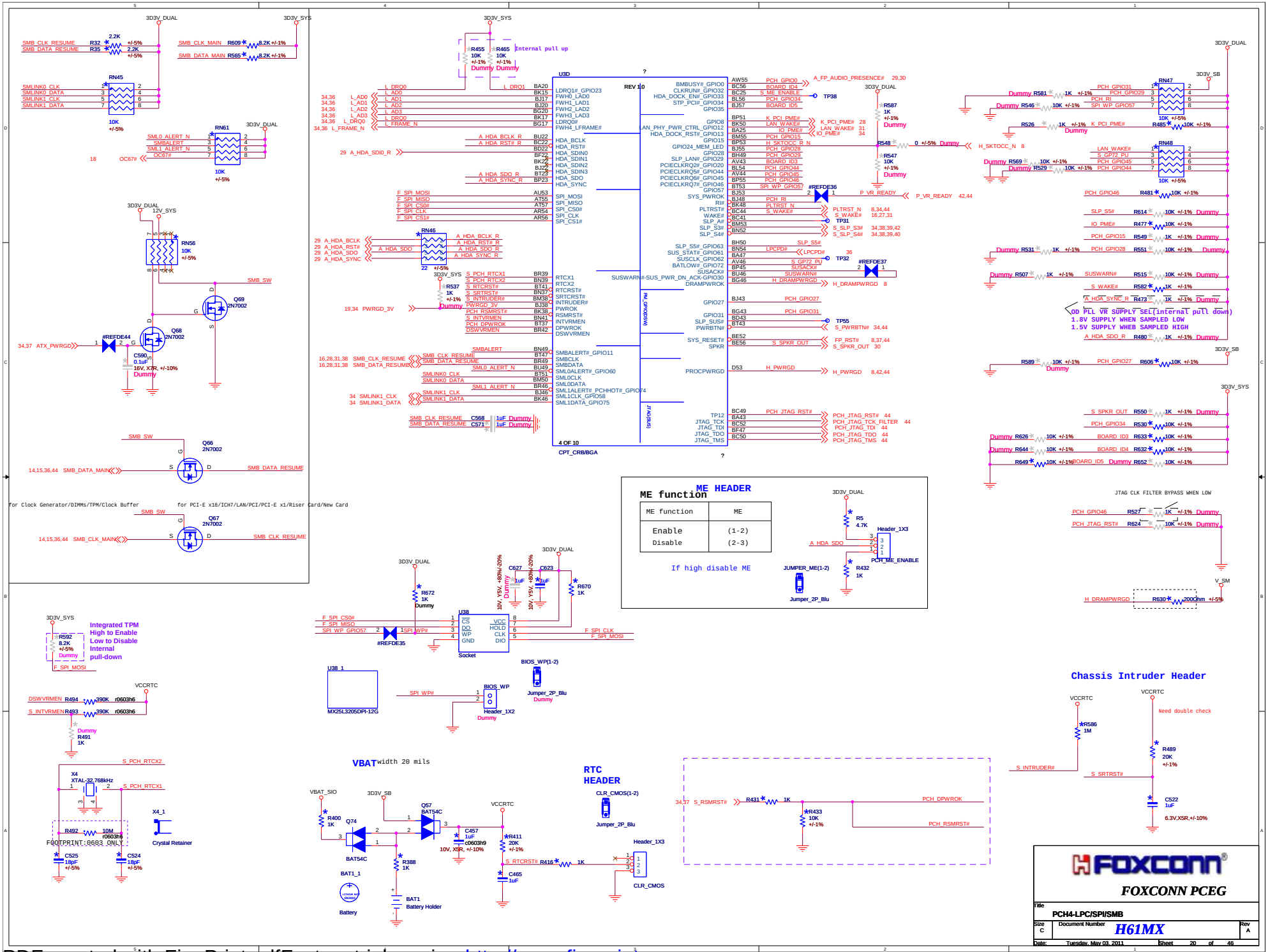

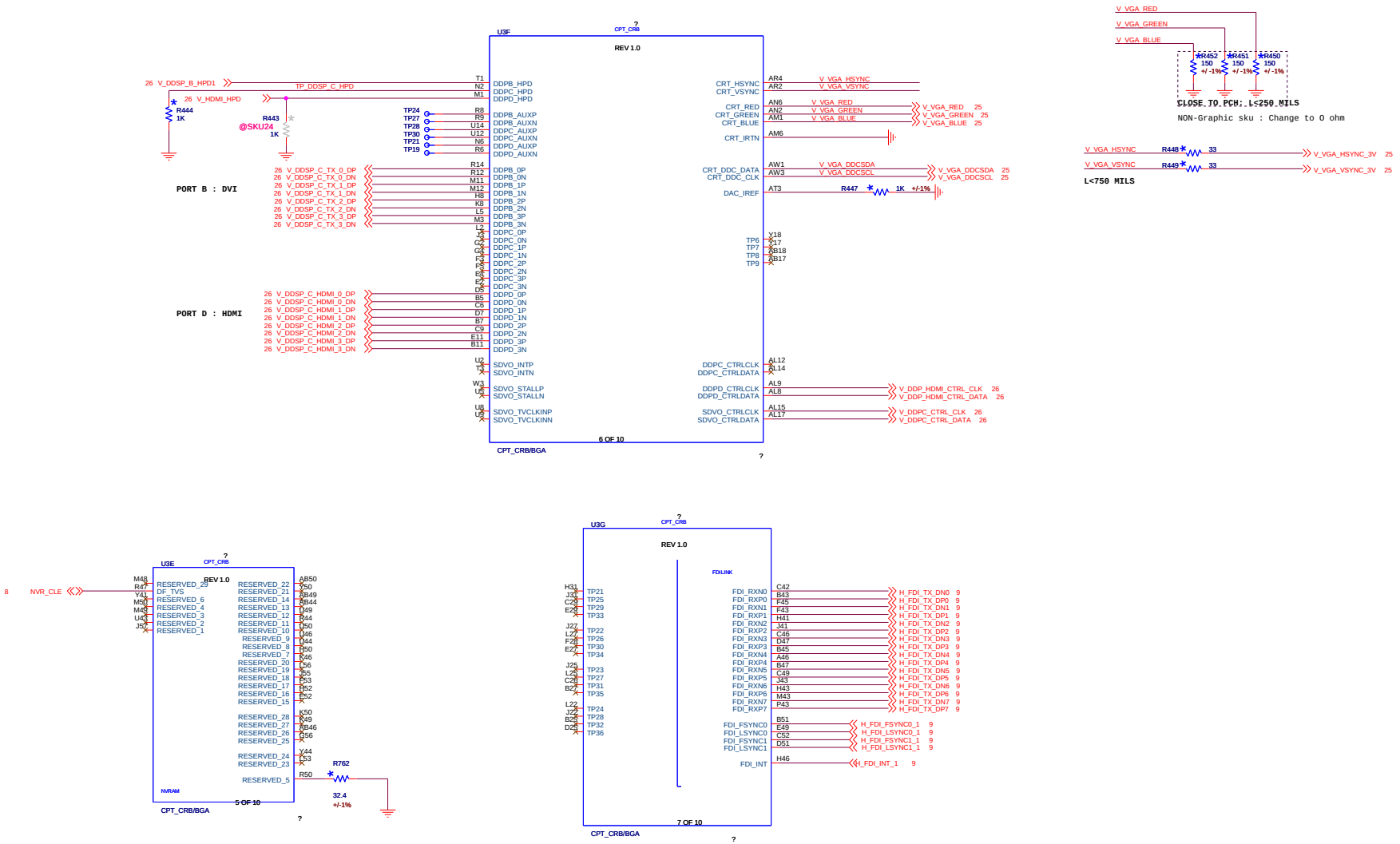

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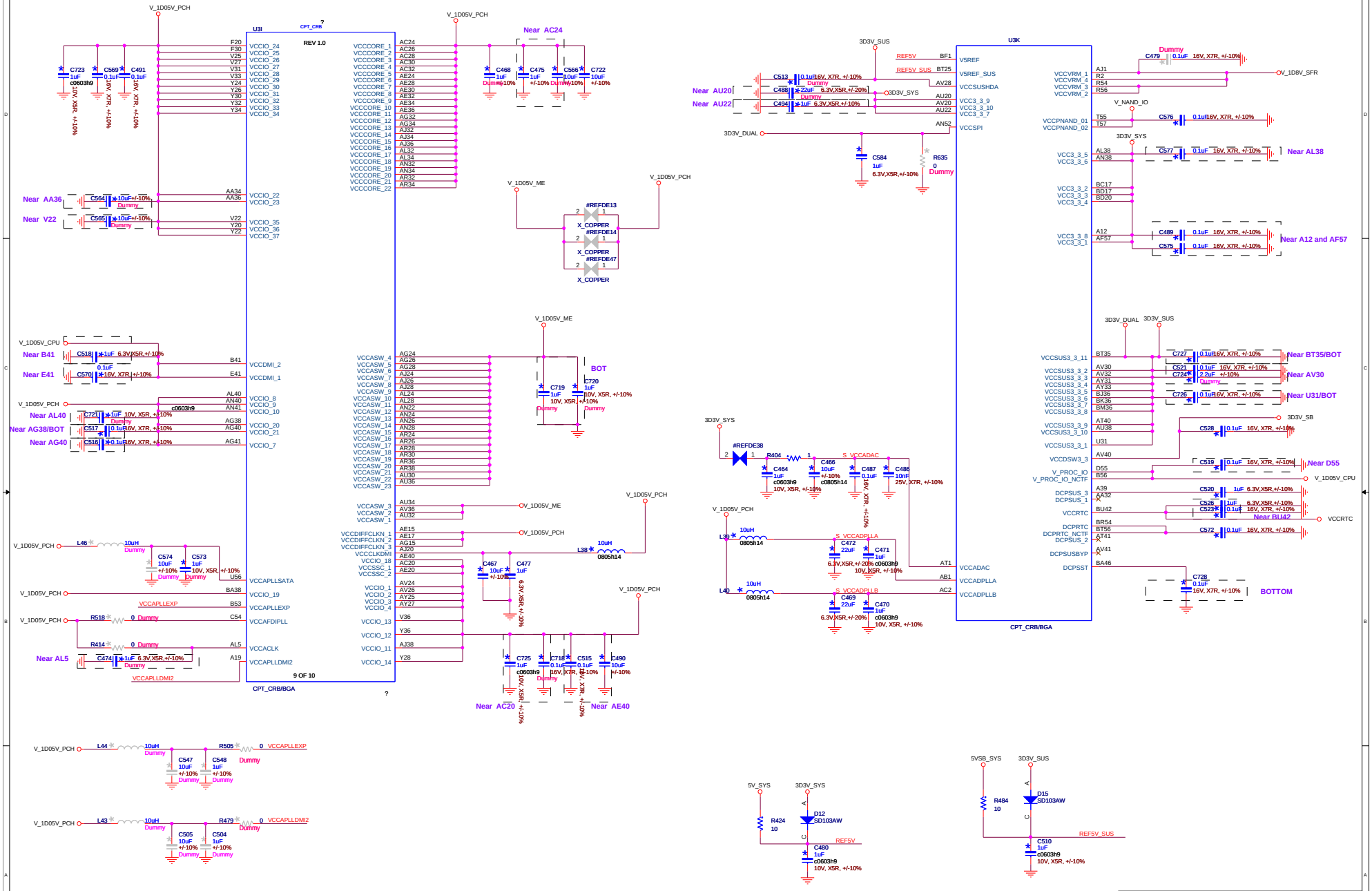

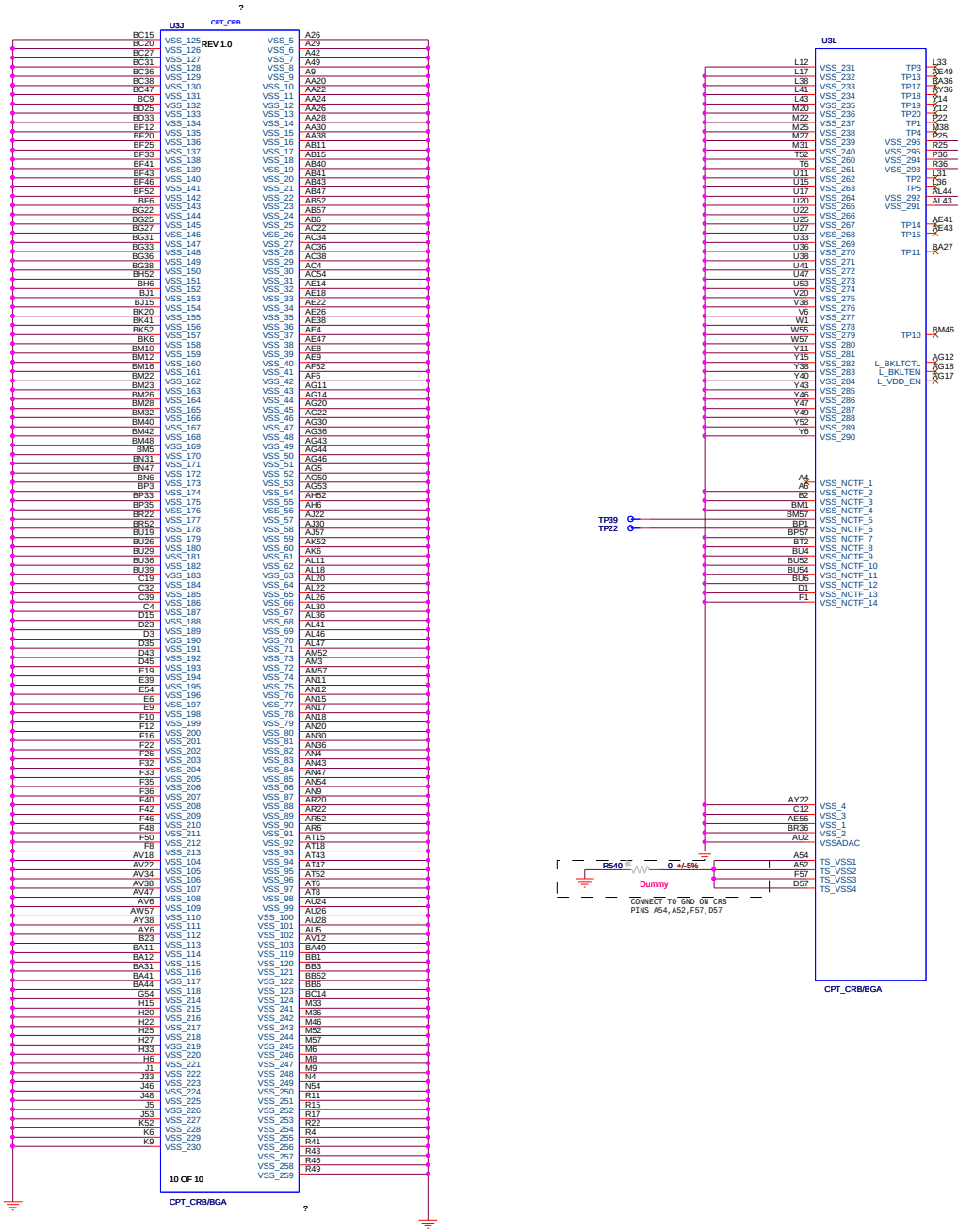

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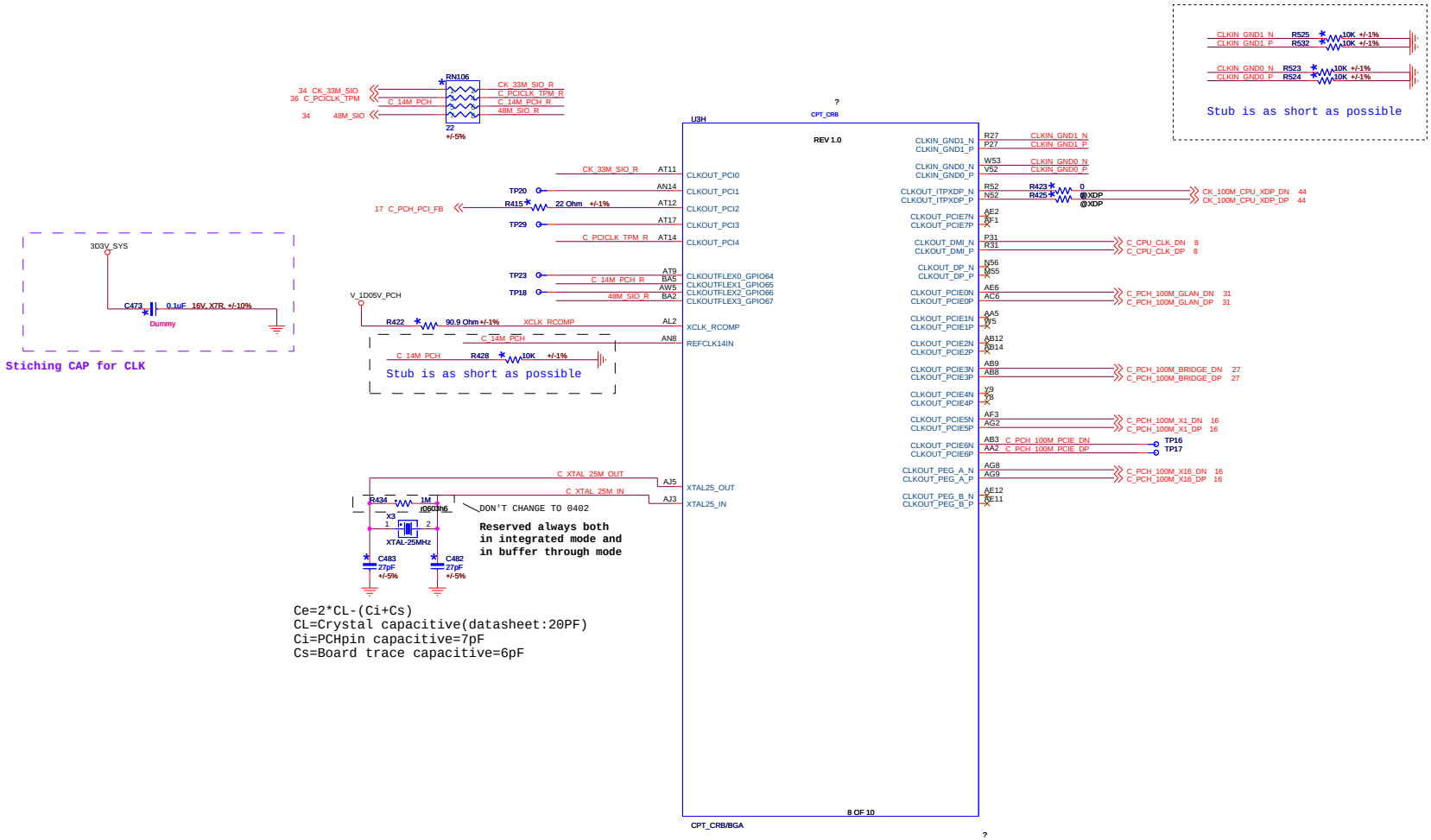

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Title	PCH8-CLOCK	
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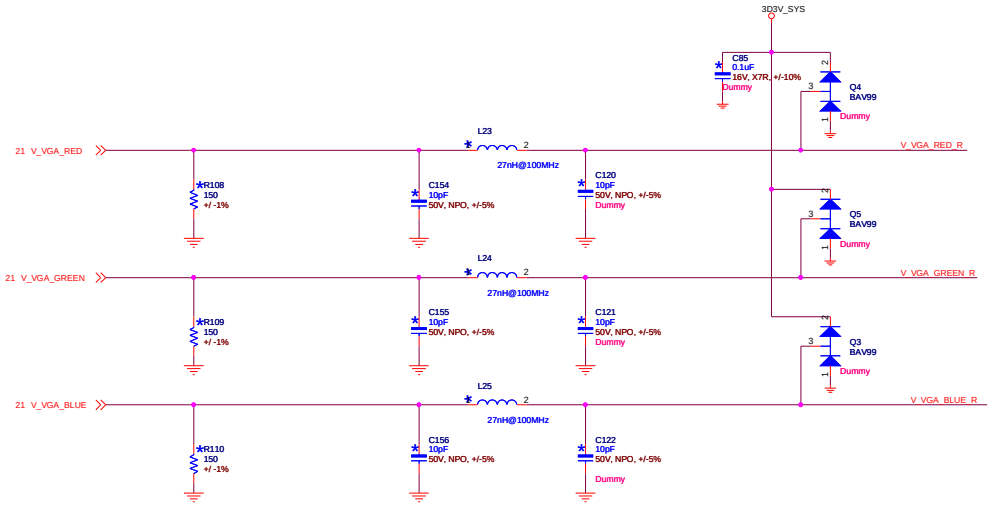
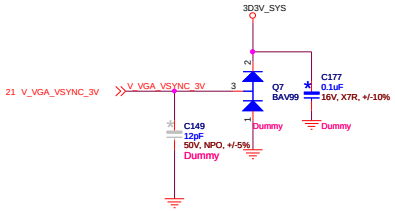
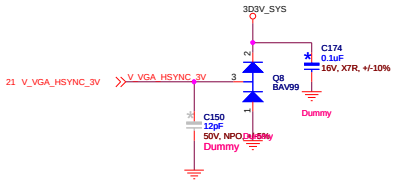
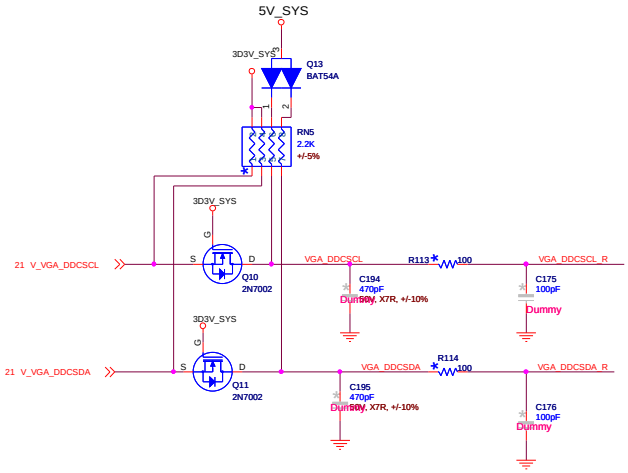
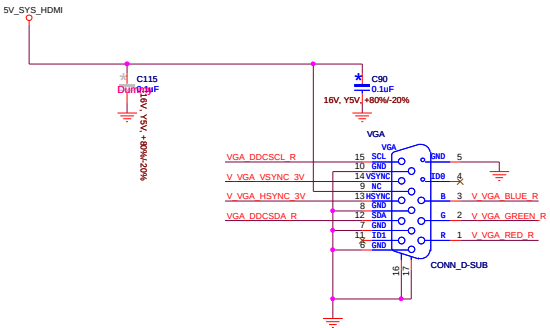
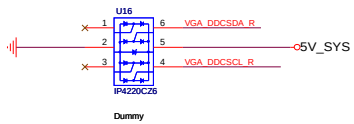








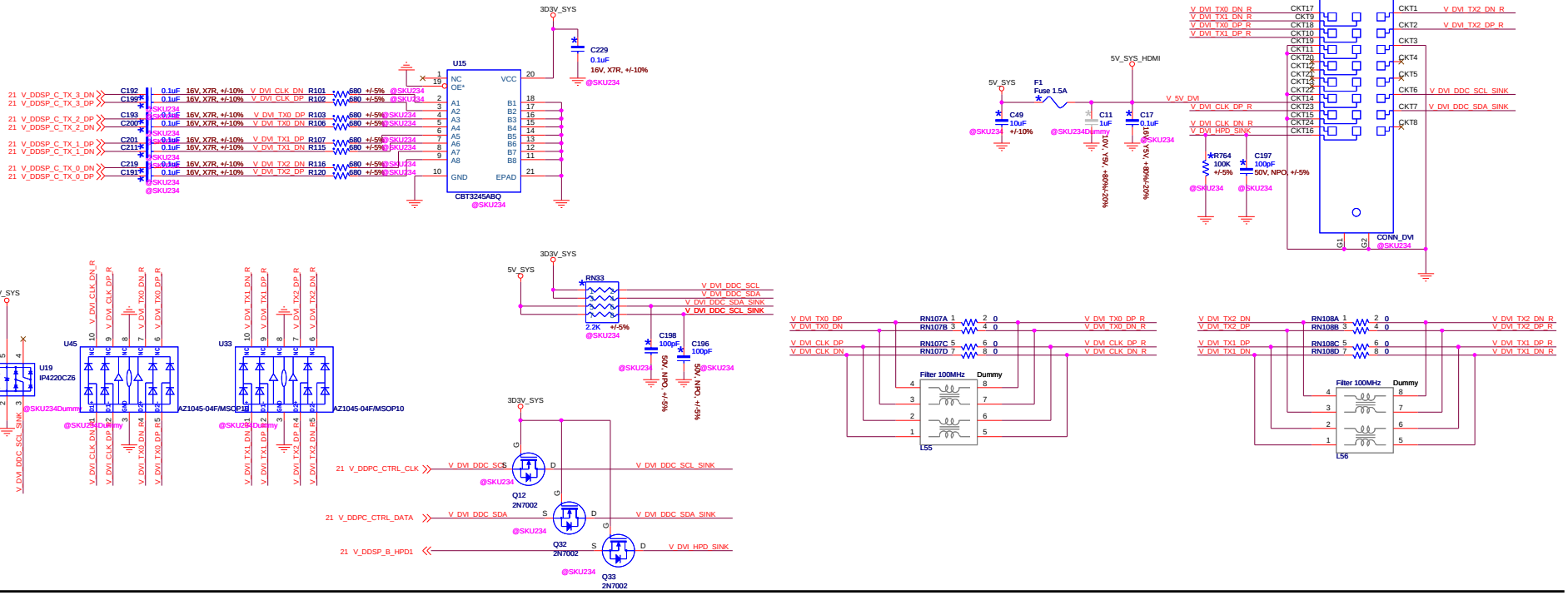




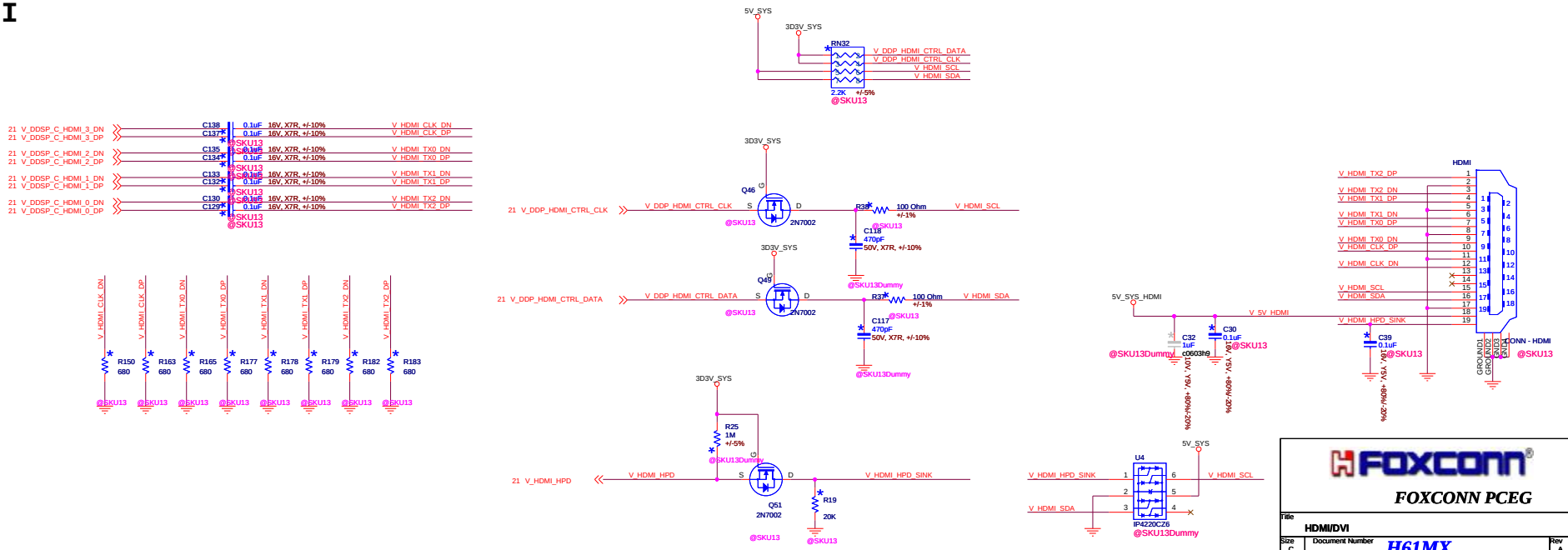
FOXCONN PCEG

Title: VGA			
Size: C	Document Number: H61MX		Rev: A
Date: Tuesday, May 03, 2011		Sheet 25 of 46	

DVI-D

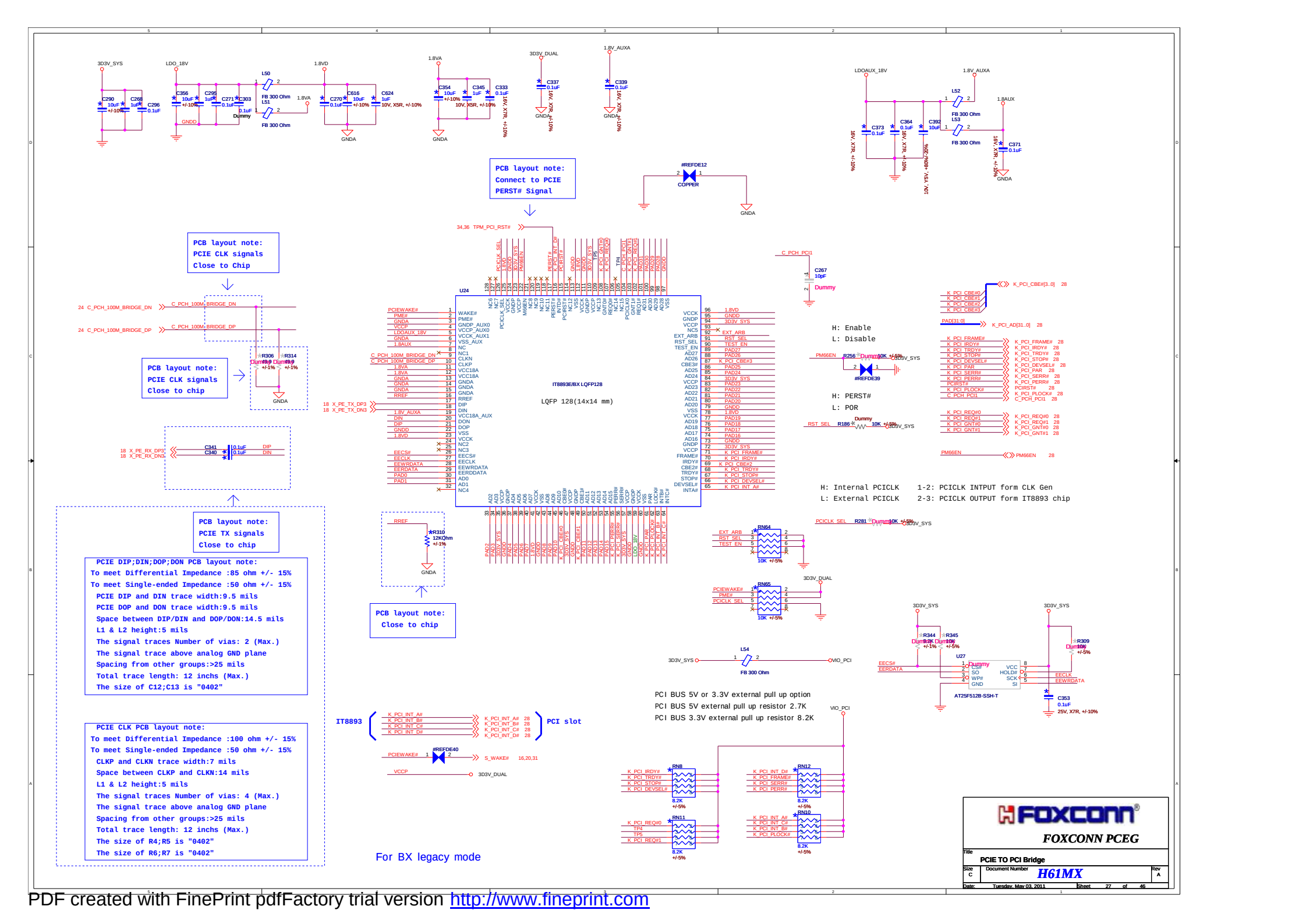


HDMI

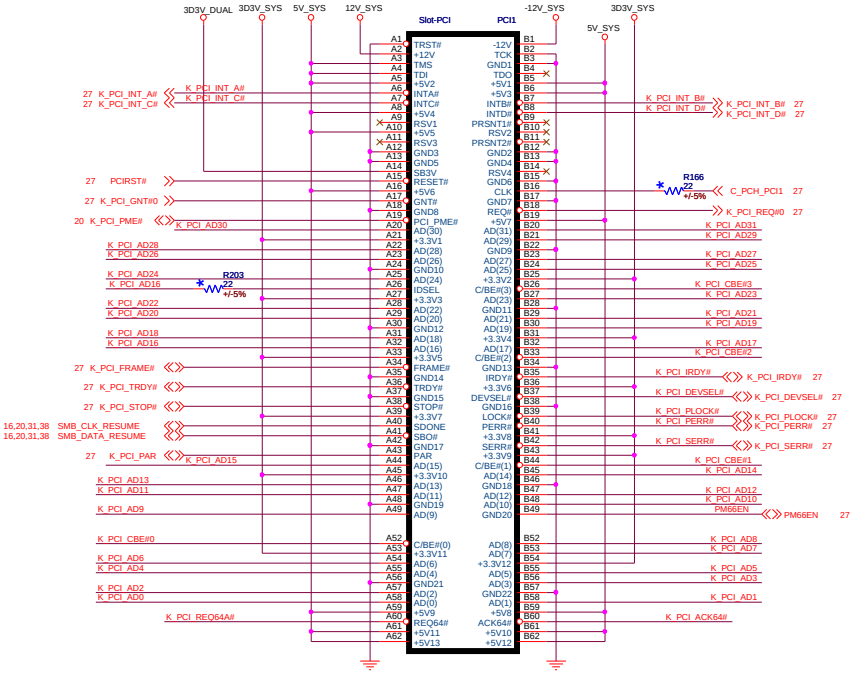


FOXCONN PCEG

Title	HDMI/DVI		
Size C	Document Number H61MX		Rev A
Date: Tuesday, May 31, 2011	Sheet 26 of 46		

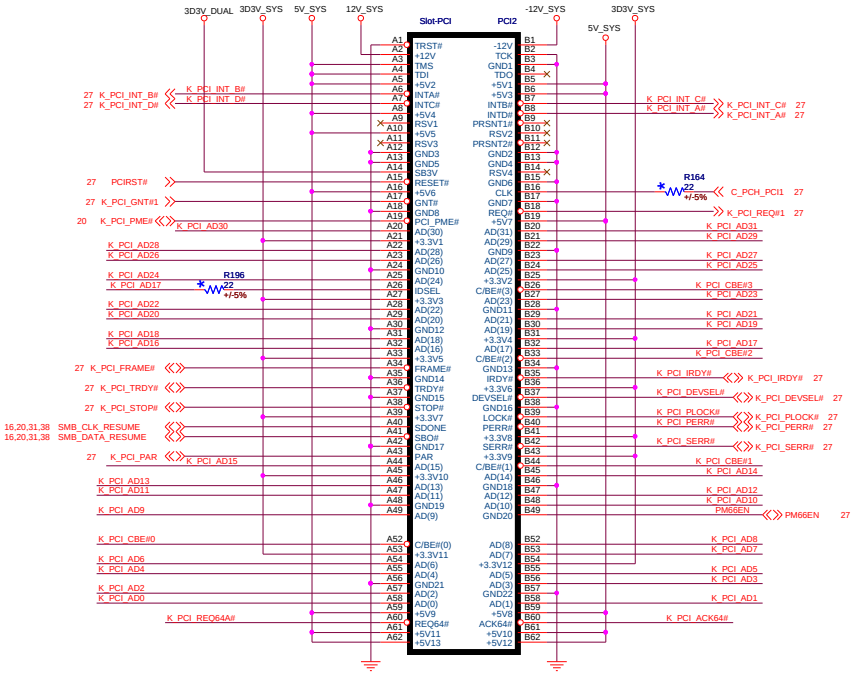


PCI 1



IRQ: A B C D
IDSEL: AD16
REQ/GNT: 0

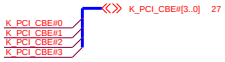
PCI 2

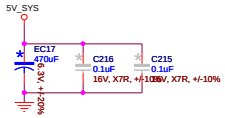


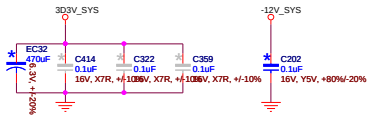
IRQ: B C D A
IDSEL: AD17
REQ/GNT: 1

PCI BUS if use 5V external pull up resistor is 2.7K

2010.6.22 update







FOXCONN PCEG

Title: PCI SLOT1/2

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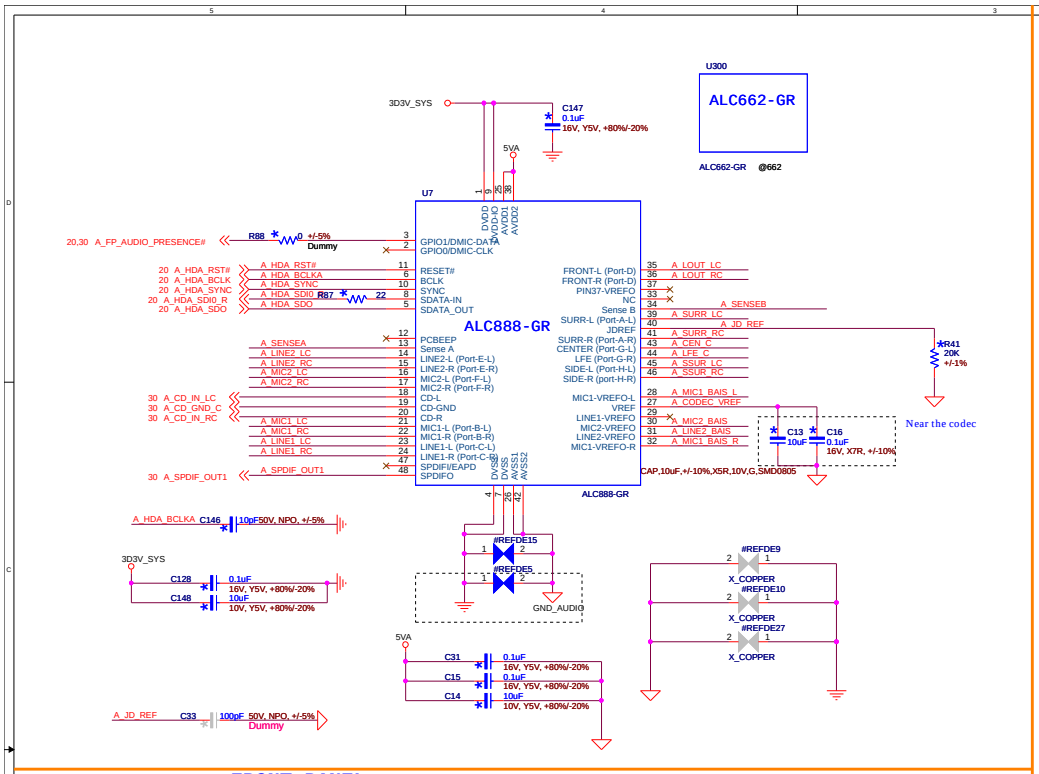

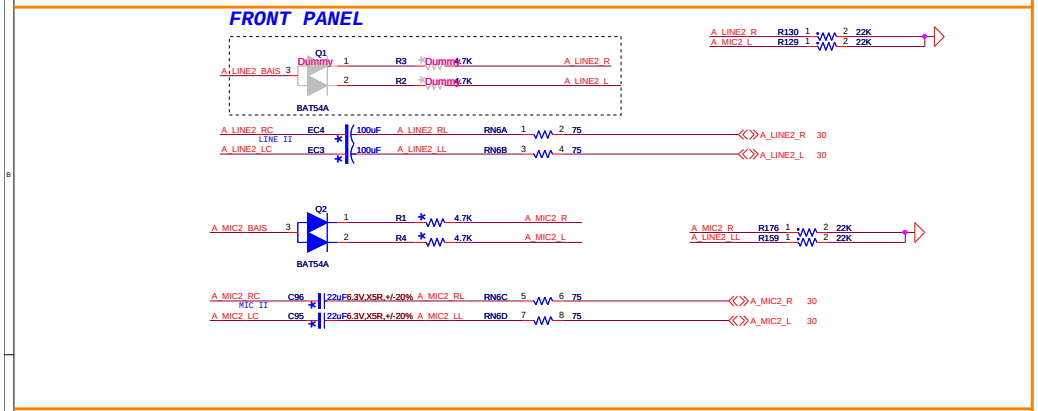

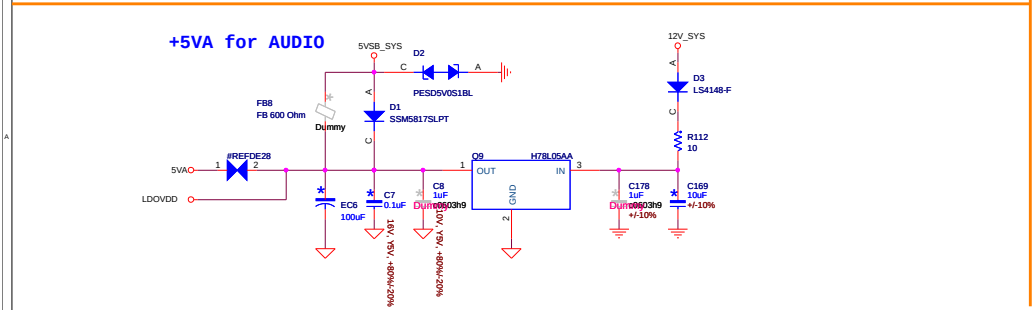

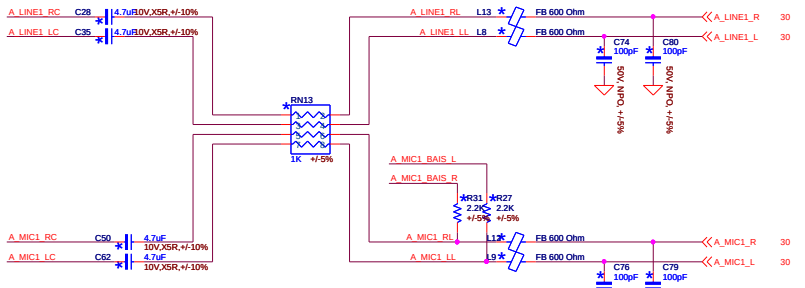

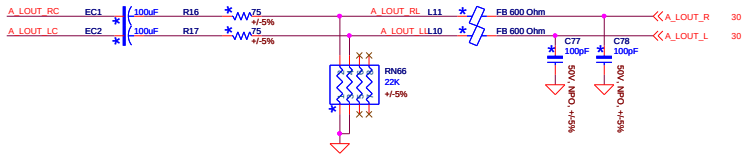

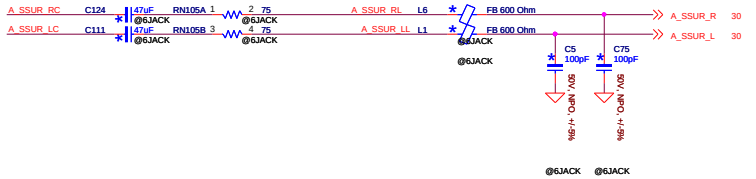

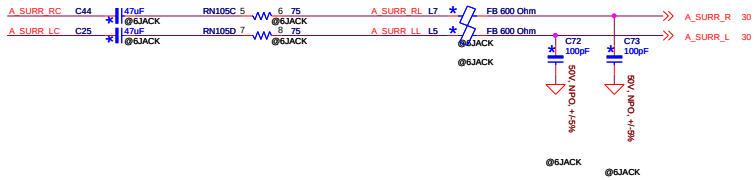

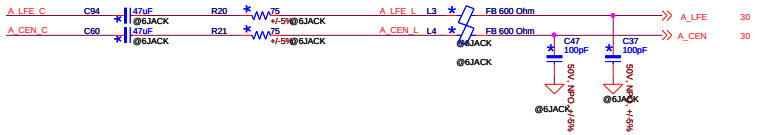

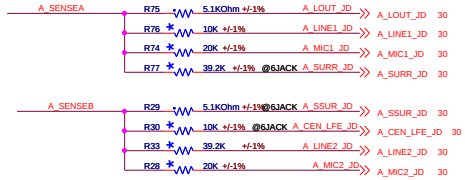

FOXCONN PCEG

Title: AUDIO_ALC888/ALC662

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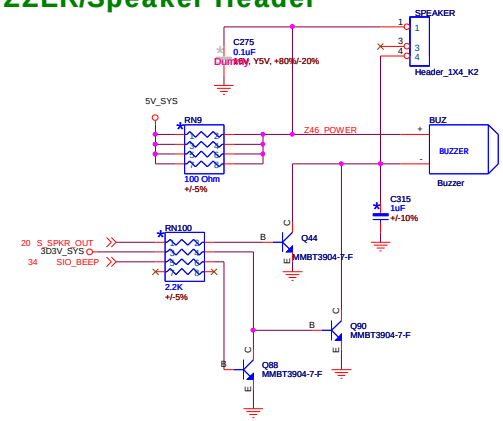
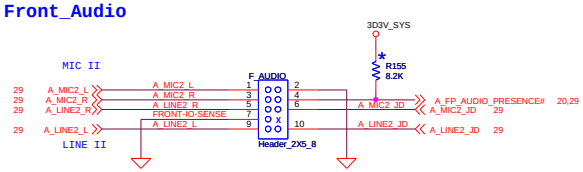
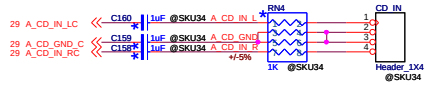
BUZZER/Speaker Header

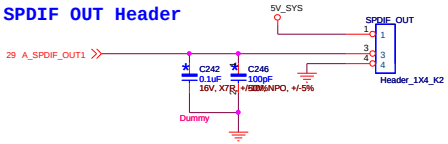


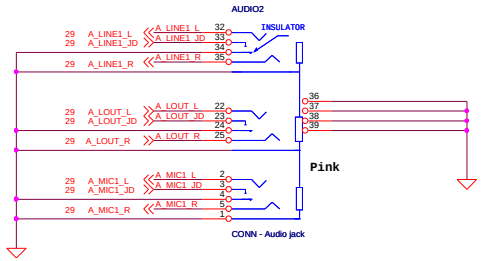
Front_Audio



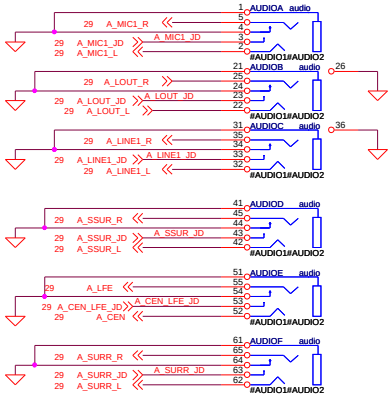


SPDIF OUT Header





Colay



AUDIO1

CONN-6 Ports Audio
@6JACK

Audio Jack

C	LINE IN (UAJ)	F	SURR OUT (UAJ)
B	LINE OUT (UAJ)	E	CEN/LFE (UAJ)
A	MIC IN (UAJ)	D	SIDE SURR OUT (UAJ)

FOXCONN

FOXCONN PCEG

Title: AUDIO CONN/SPDIF/CD-IN

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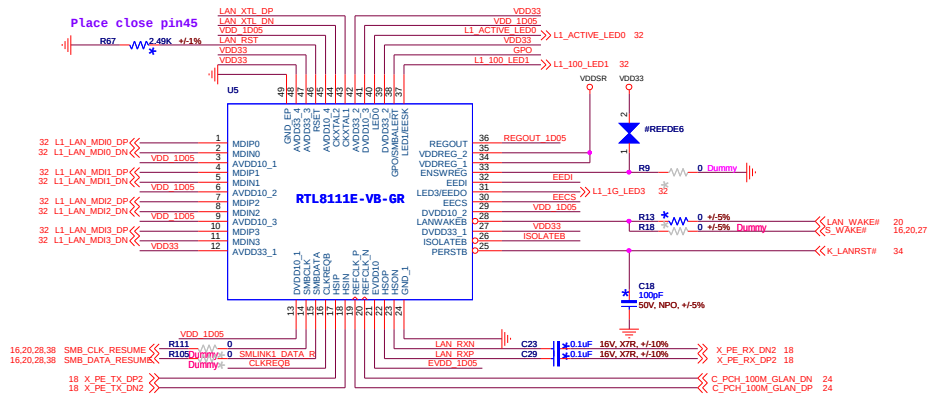

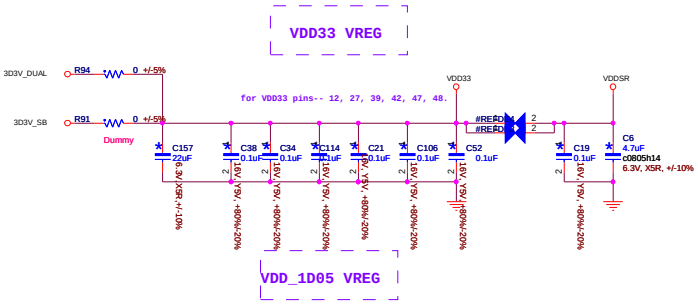

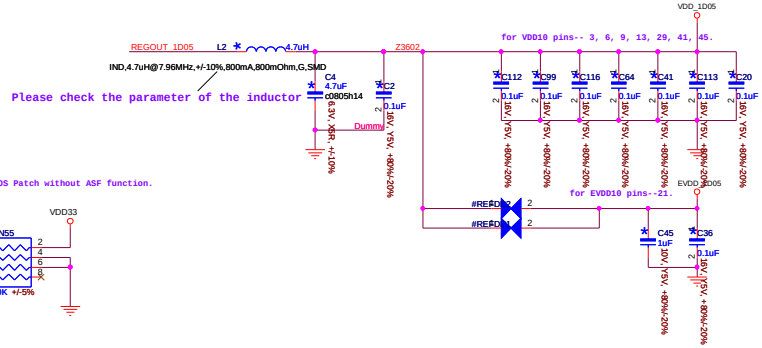

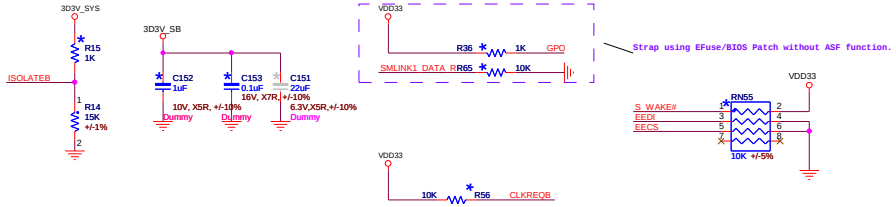

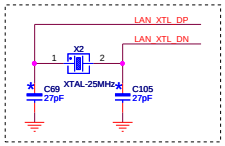

FOXCONN PCEG

Title	LAN_RTL8111E	
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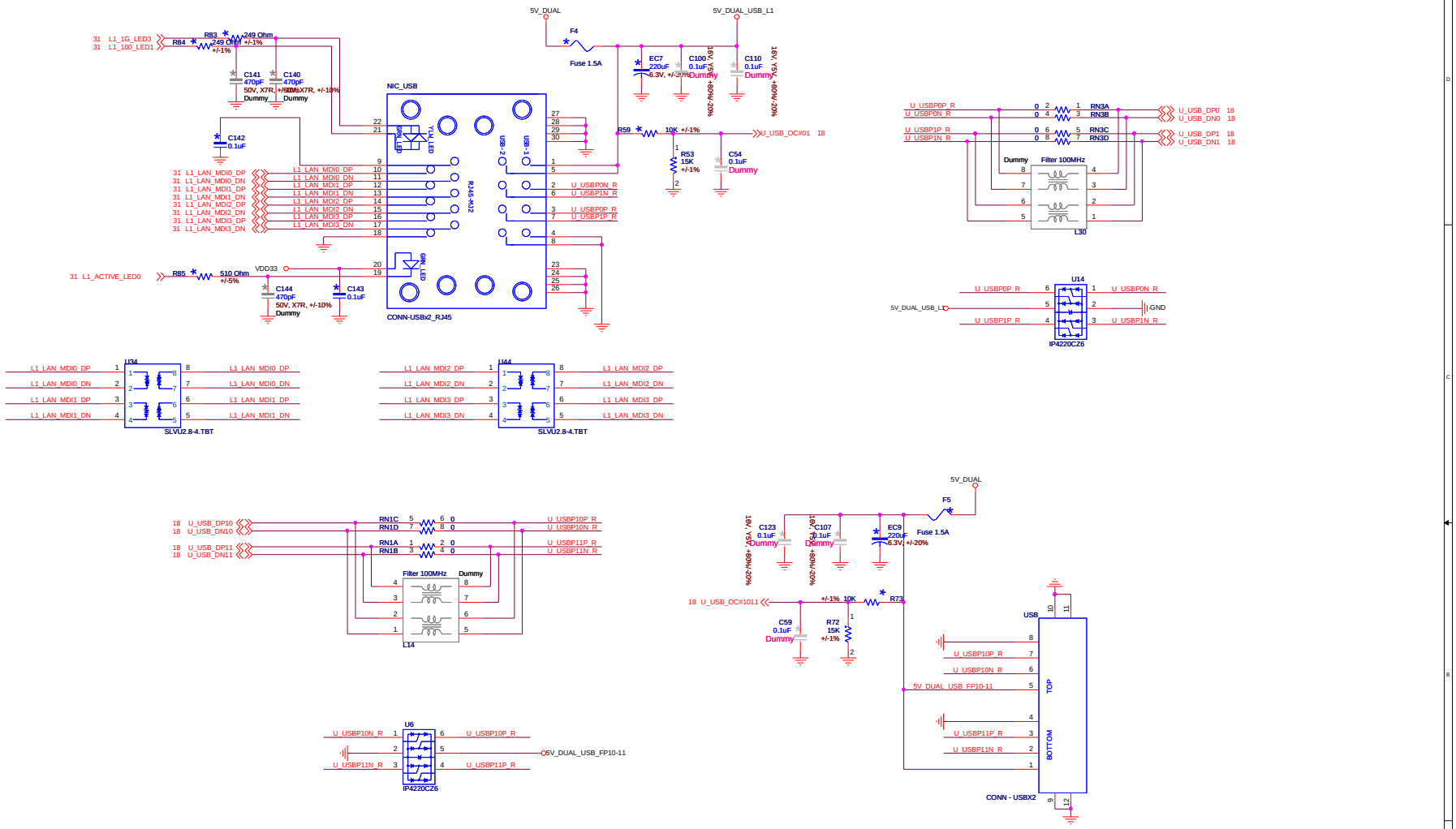
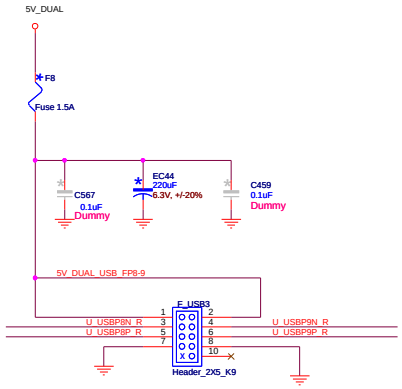
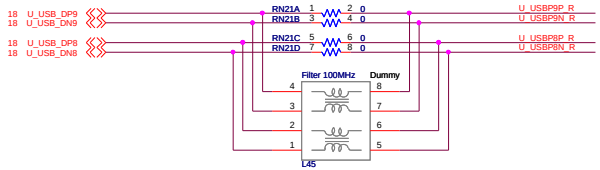


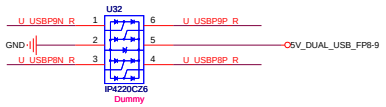
FOXCONN PCEG

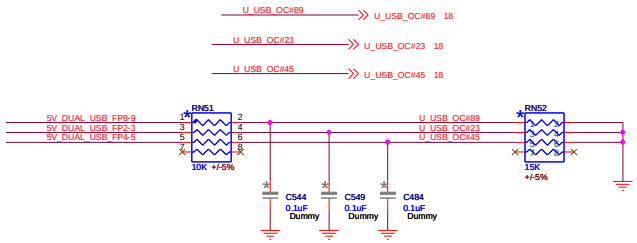
Title	LAN/USB2.0 CONN		
Size C	Document Number H61MX		Rev A
Date: Tuesday, May 03, 2011	Sheet 32 of 46		

Front_USB1

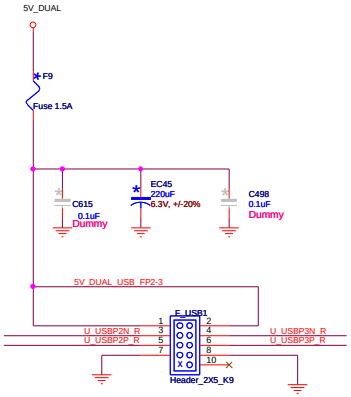


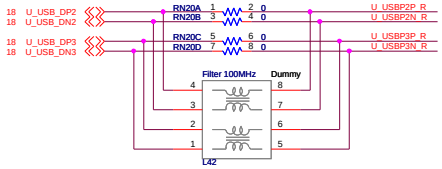


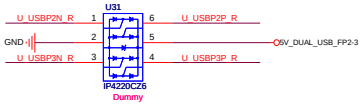


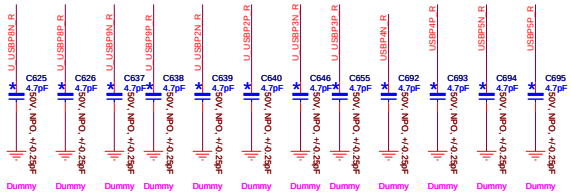


Front_USB2

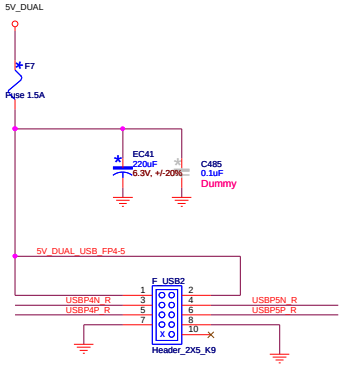


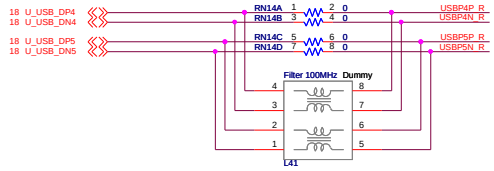


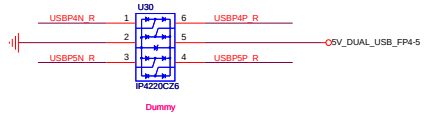




Front_USB3







FOXCONN PCEG

Title	Front USB2.0 Header	
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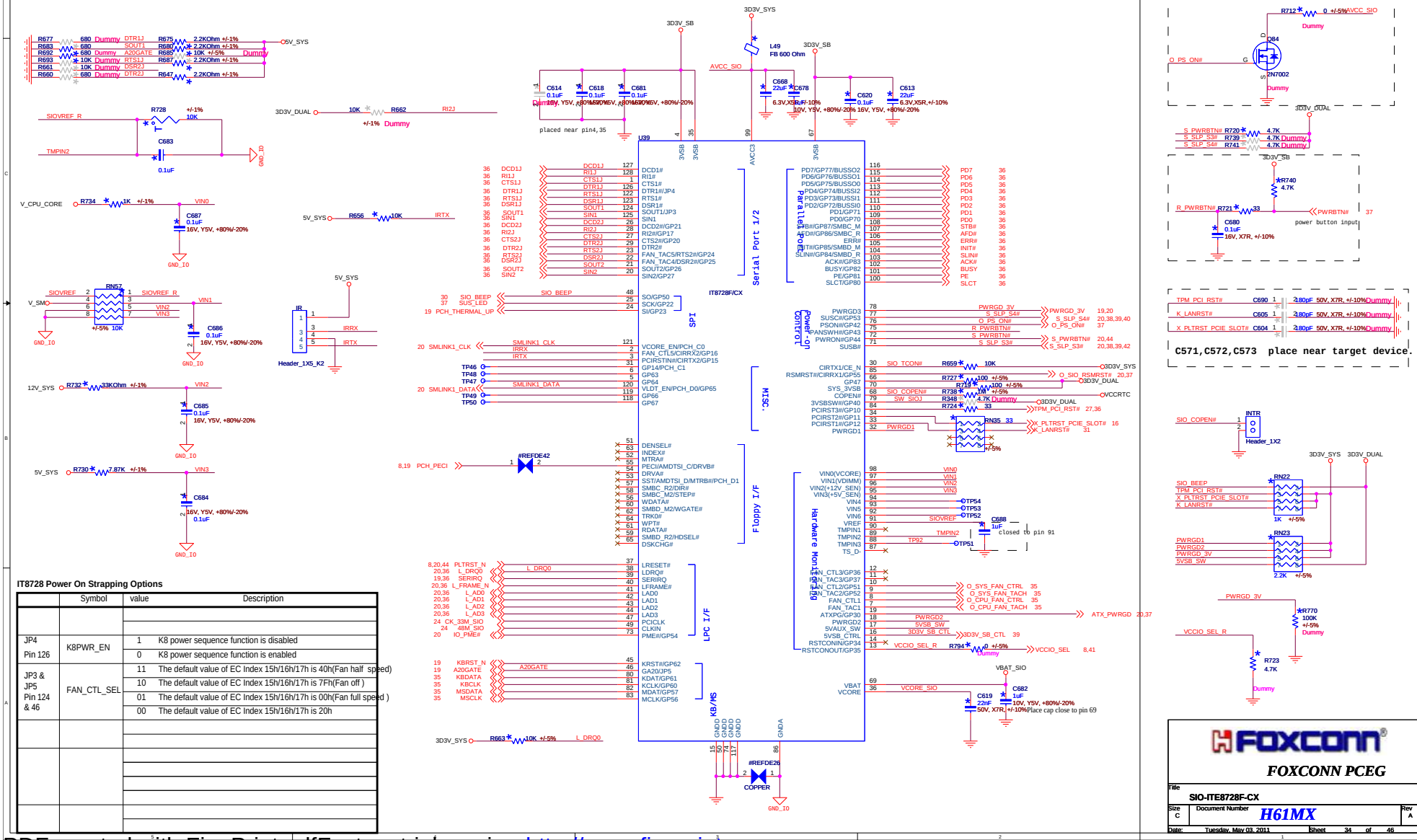
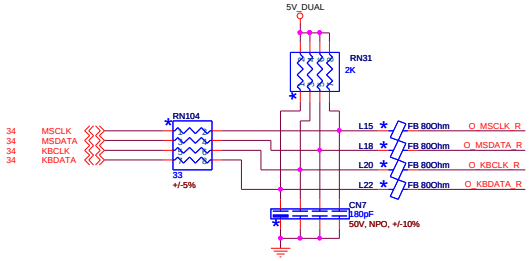


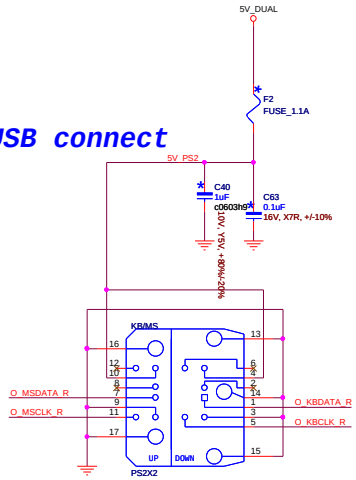
IT8728 Power On Strapping Options

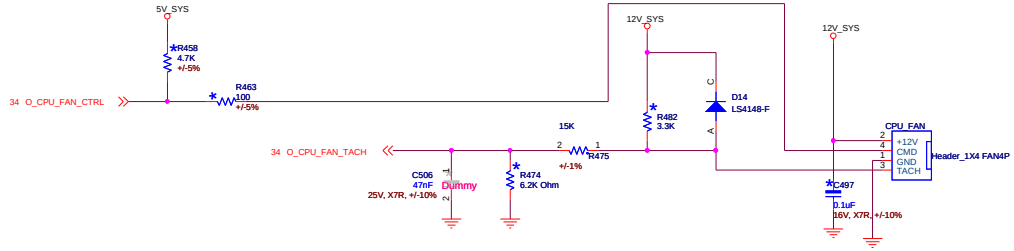
	Symbol	value	Description
JP4 Pin 126	K8PWR_EN	1	K8 power sequence function is disabled
		0	K8 power sequence function is enabled
JP3 & JP5 Pin 124 & 46	FAN_CTL_SEL	11	The default value of EC Index 15h/16h/17h is 40h(Fan half speed)
		10	The default value of EC Index 15h/16h/17h is 7Fh(Fan off)
		01	The default value of EC Index 15h/16h/17h is 00h(Fan full speed)
		00	The default value of EC Index 15h/16h/17h is 20h

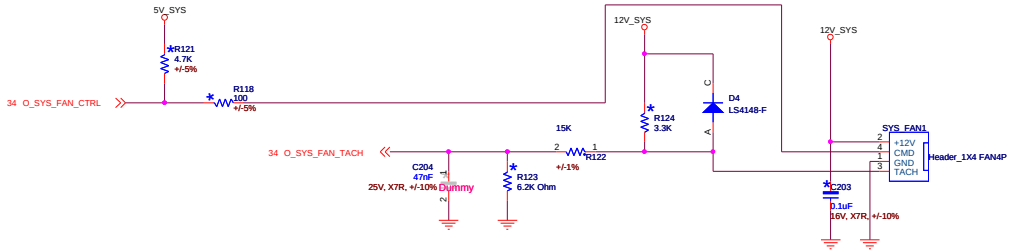
Add for EMI on 0929

KB /USB connect









FOXCONN PCEG

Title: PS2/FAN

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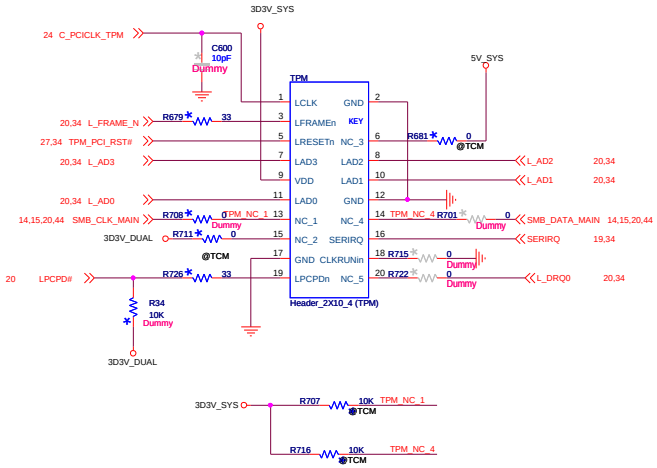
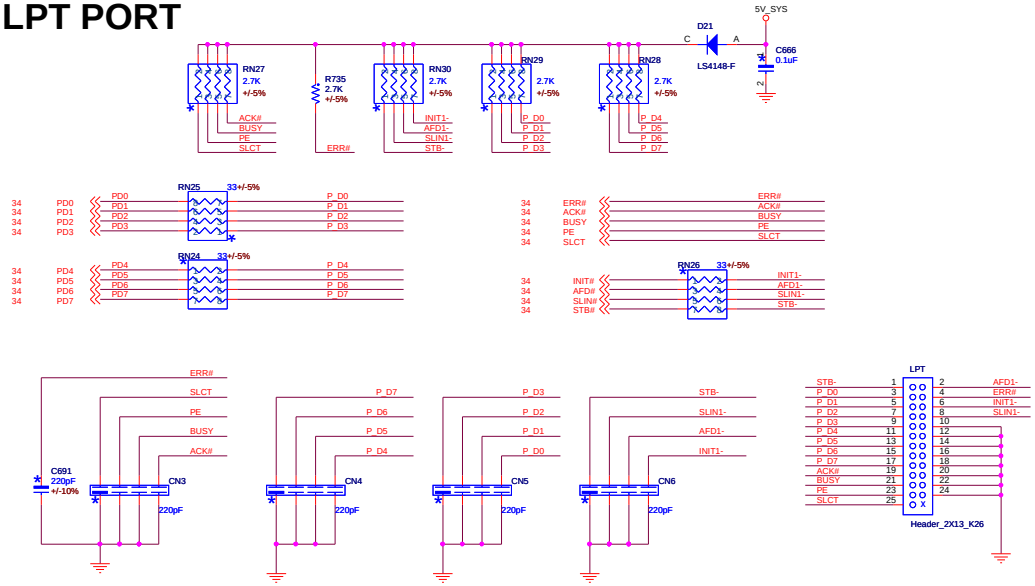
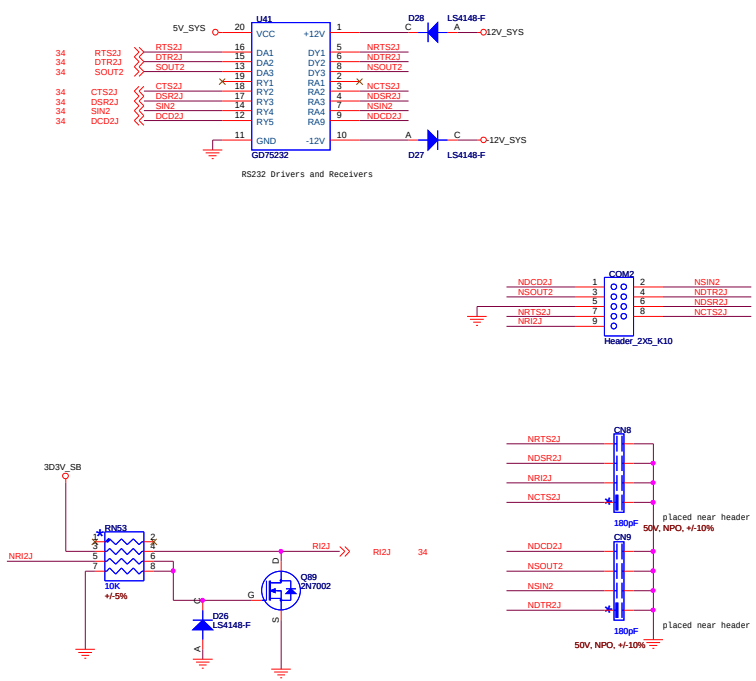
TPM



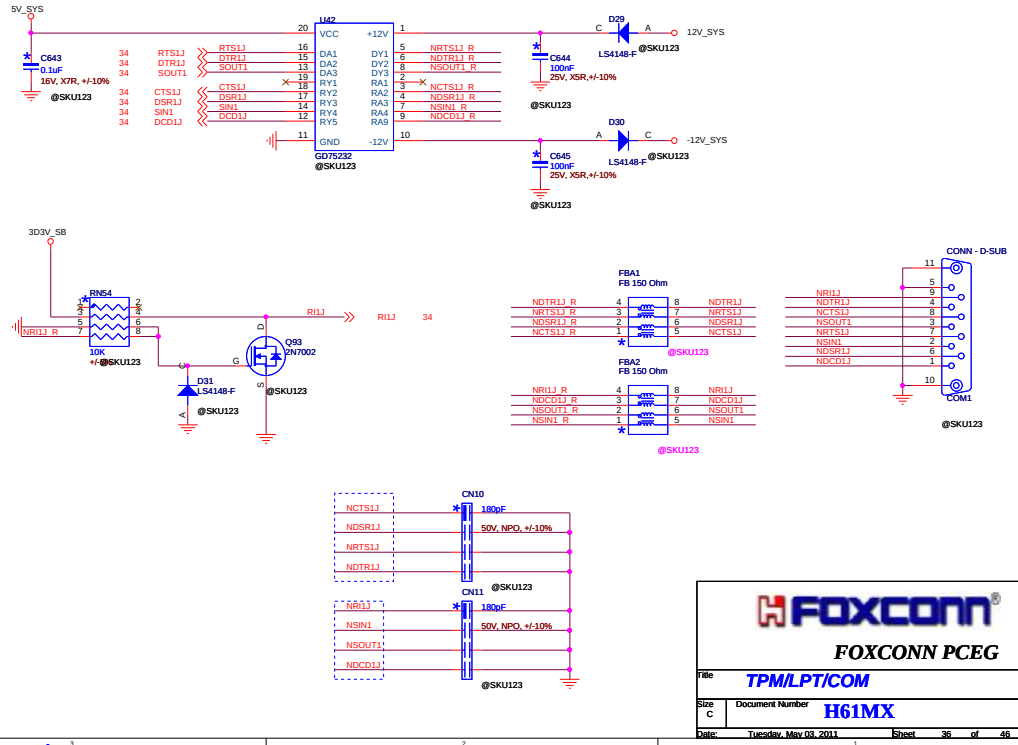
LPT PORT



COM HEADER



COM PORT



FOXCONN PCEG		
Title: TPM/LPT/COM		
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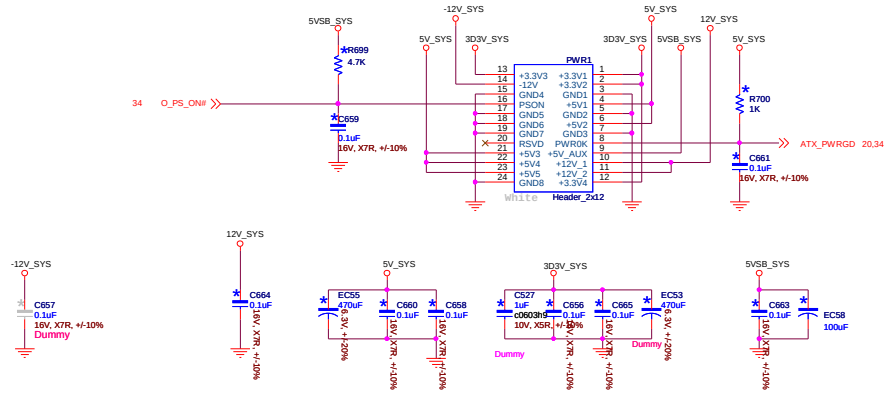
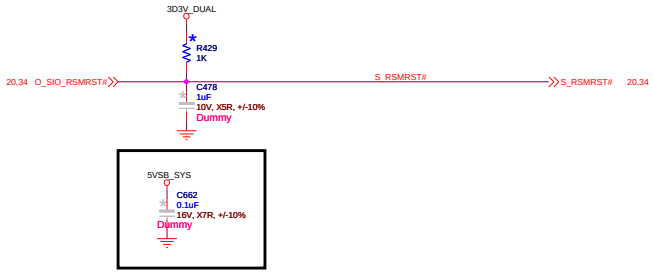
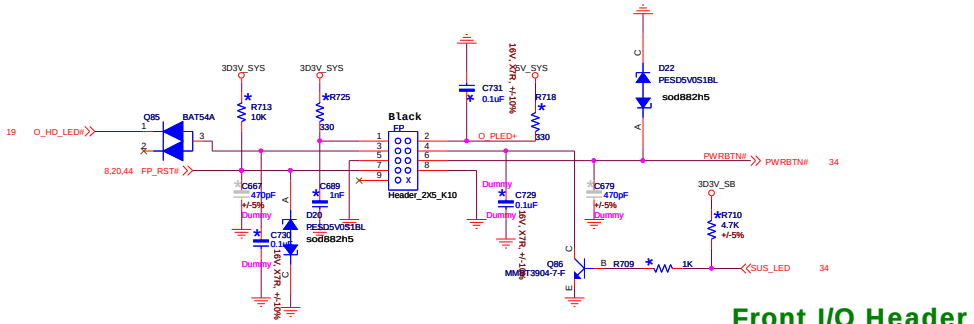
ATX POWER CONNECTOR



RESUME RESET LOGIC





S0 : Power LED is on;
S1 : Power LED is blinking;
S3~S5: Power LED is off.

Front Panel Switch/LED

HD_LED+	1	2	Power
HD_LED-	3	4	Power LED(Green)
GND	5	6	Power button
Reset button	7	8	Detect pin
Detect pin	9	10	Key

Front I/O Header

FOXCONN PCEG

Title: ATX CONN/FP PANEL/RSMRST

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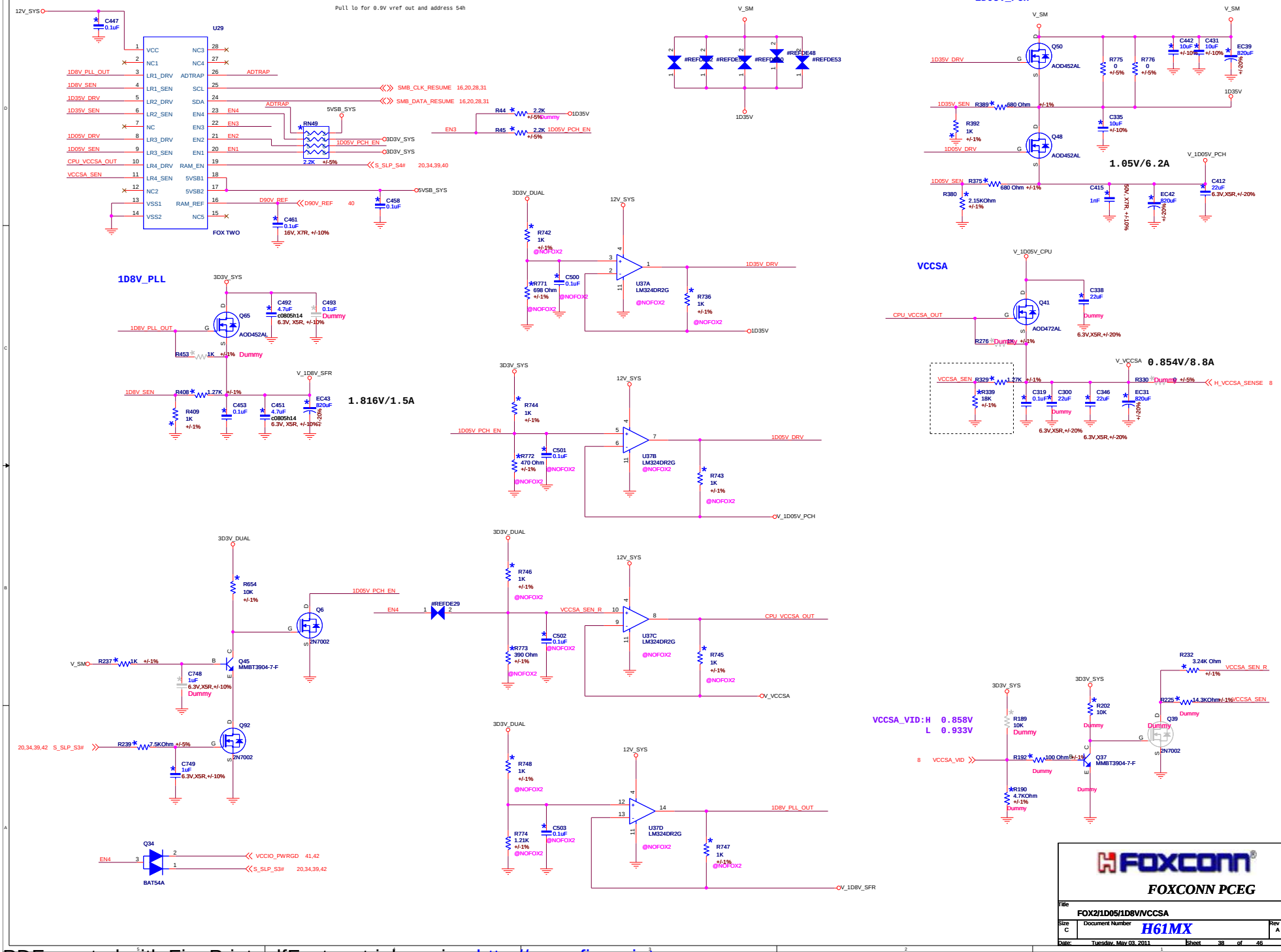
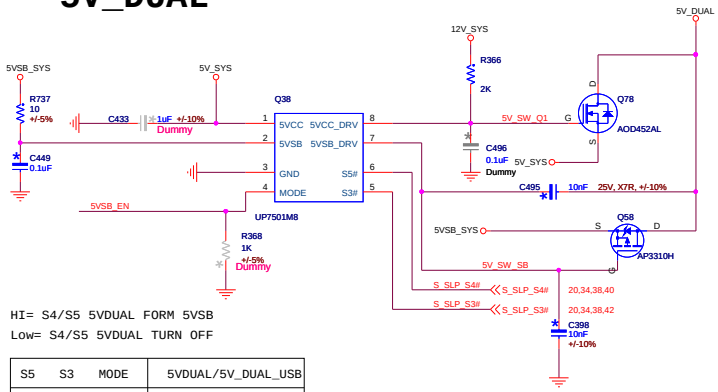
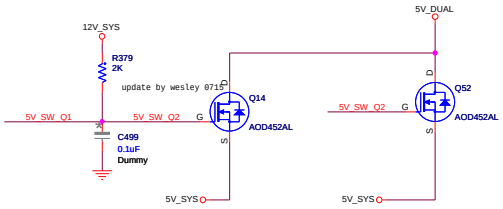


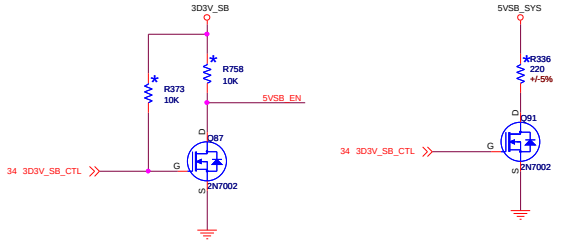
5V_DUAL





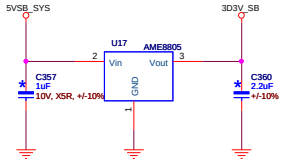
HI= S4/S5 5VDUAL FORM 5VSB
Low= S4/S5 5VDUAL TURN OFF

S5	S3	MODE	5VDUAL/5V_DUAL_USB
H	H	X	5VCC
H	L	X	5VSB
L	X	H	5VSB
L	X	L	Shutdown

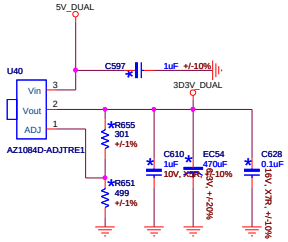


3D3V_SB

Max. output current = 3A



3D3V_DUAL



Vout=Vref(1+R2/R1)+IadjR2
R1 is Up Resistor.
Iadj=50uA
Vref=1.25V

FOXCONN PCEG

Title	5V_DUAL/3.3V_SB/3.3V_DUAL	
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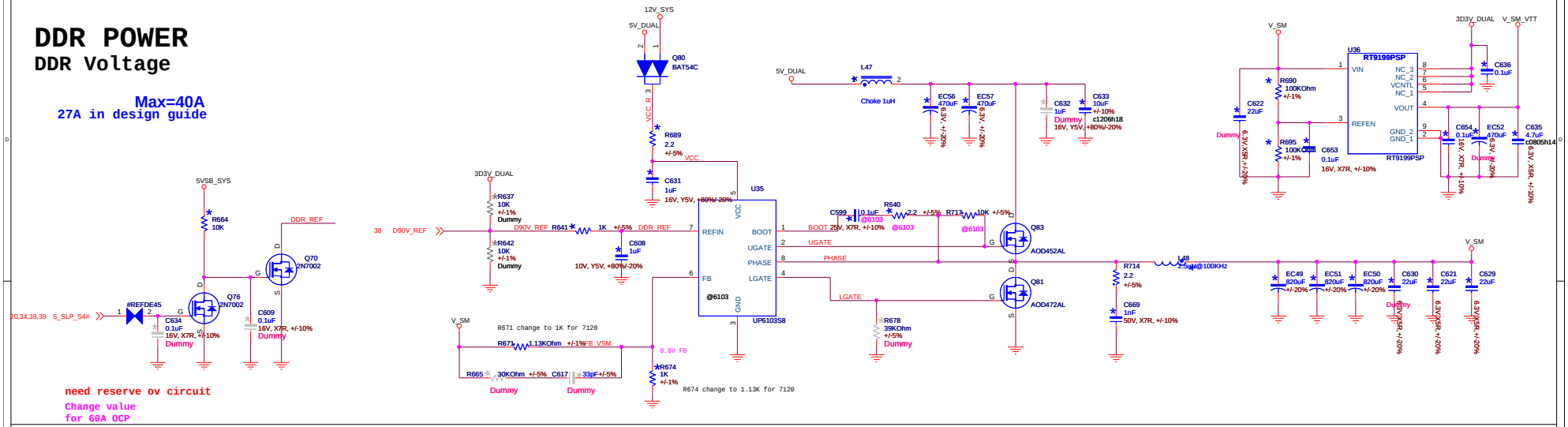
DDR POWER

DDR Voltage

Max=40A

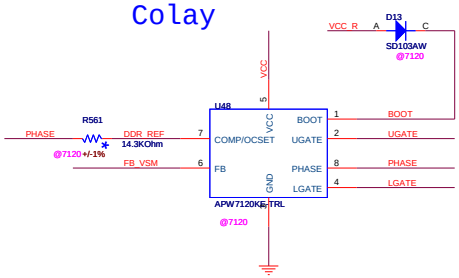
27A in design guide



need reserve ov circuit

Change value for 60A OCP

Colay



FOXCONN PCEG

Title	1D5V_STR	
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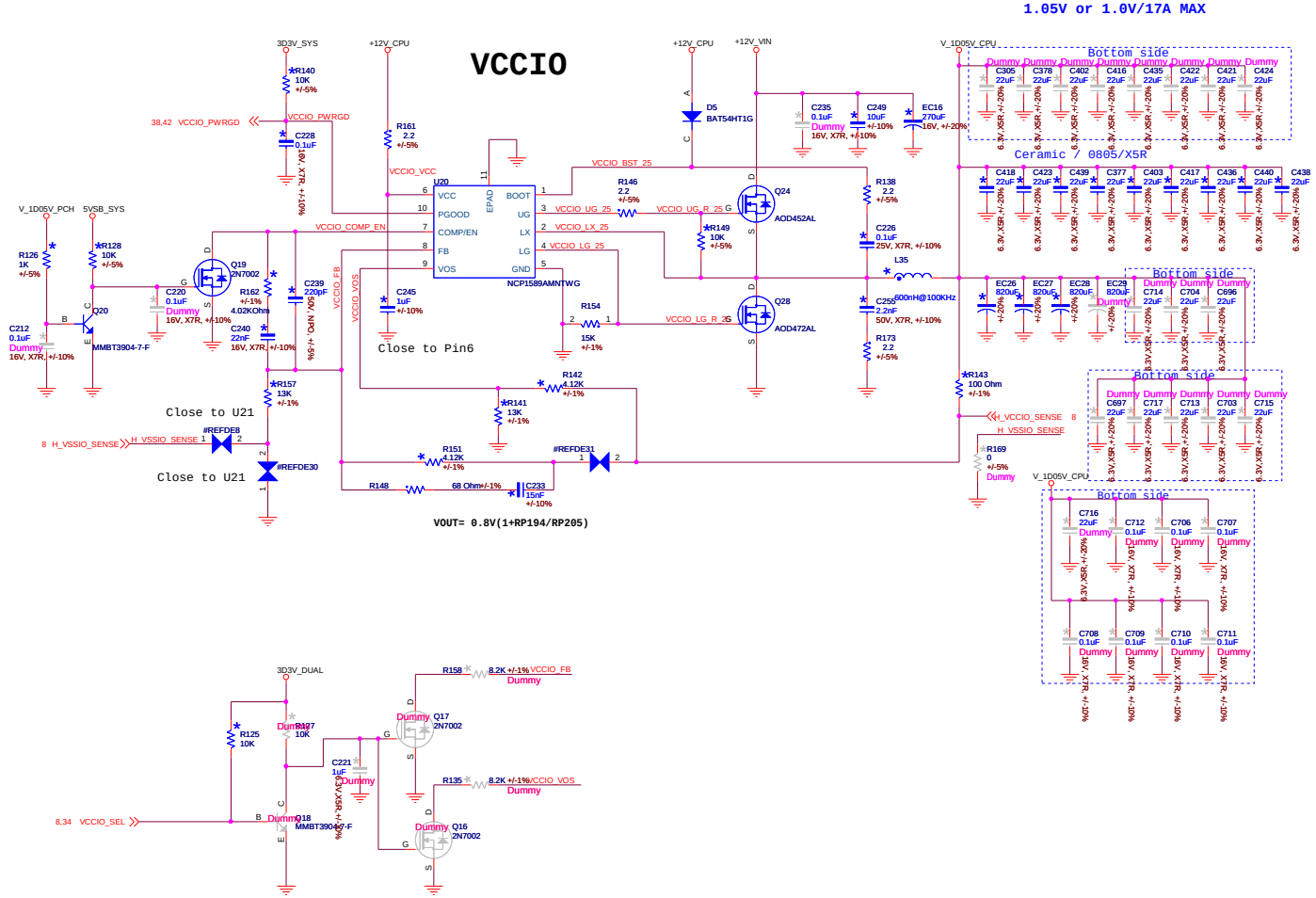
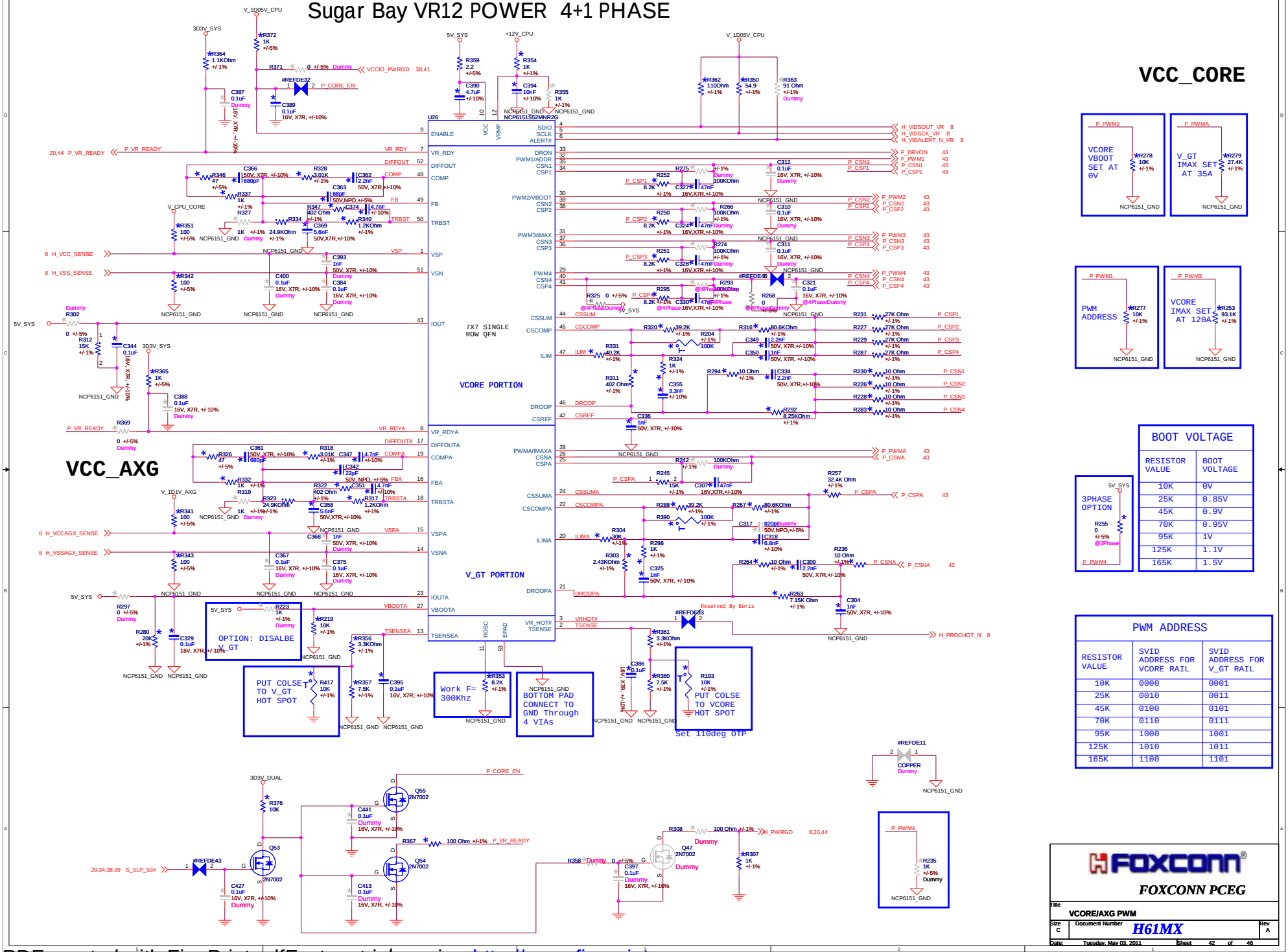


Sugar Bay VR12 POWER 4+1 PHASE



BOOT VOLTAGE

RESISTOR VALUE	BOOT VOLTAGE
10K	0V
25K	0.85V
45K	0.9V
70K	0.95V
95K	1V
125K	1.1V
165K	1.5V

PWM ADDRESS

RESISTOR VALUE	SVID ADDRESS FOR VCORE RAIL	SVID ADDRESS FOR V_GT RAIL
10K	0000	0001
25K	0010	0011
45K	0100	0101
70K	0110	0111
95K	1000	1001
125K	1010	1011
165K	1100	1101

FOXCONN PCEG

Title: VCORE/AXG PWM

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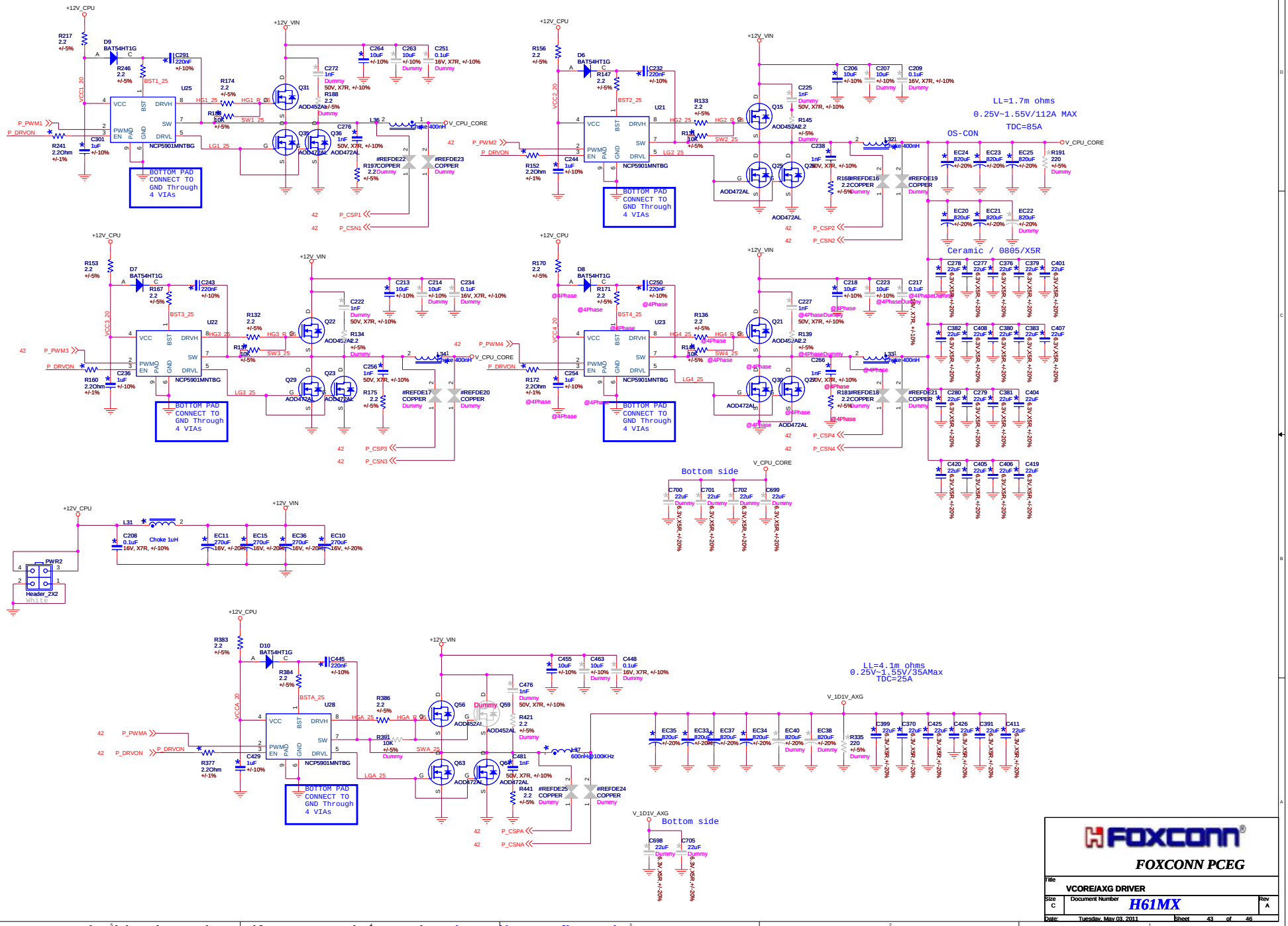
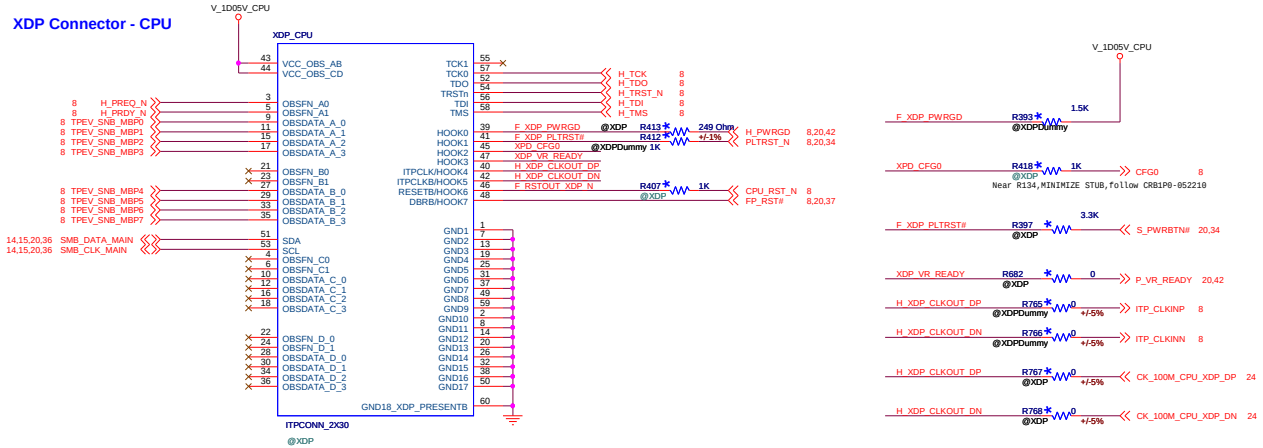
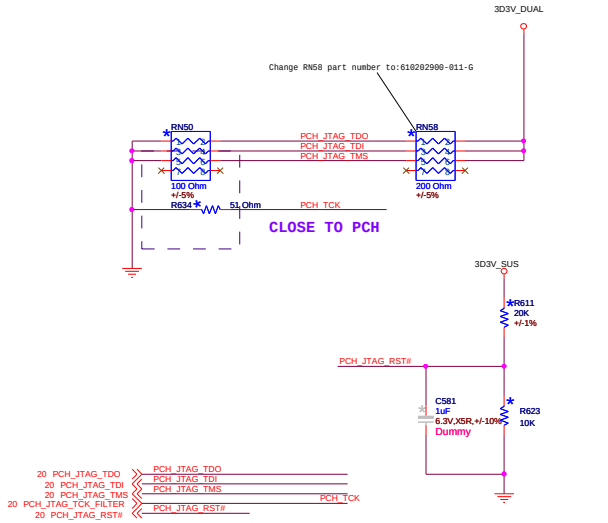


XDP Connector - CPU



XDP Connector - PCH



FOXCONN PCEG

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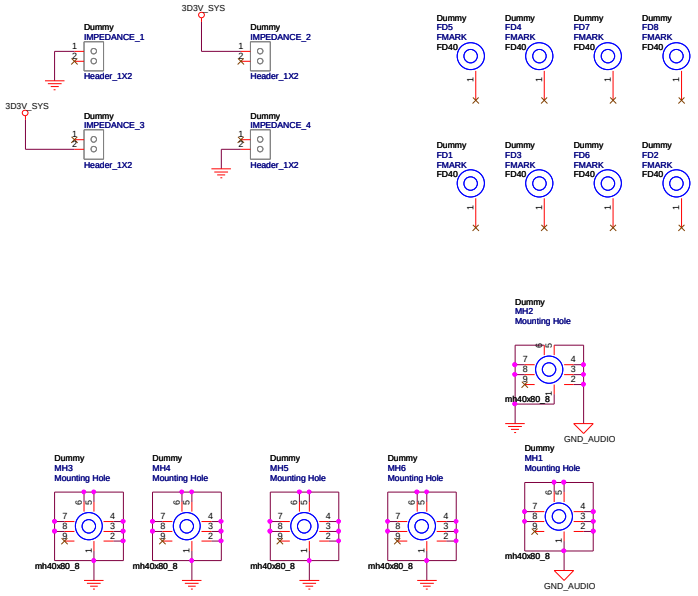

FOXCONN PCEG

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FOXCONN PCEG

Title: Changelist

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